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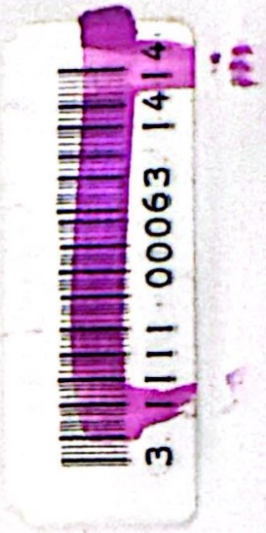

LIFE AND DEATH

BY HERBERT S. ZIM
AND SONIA BLEEKER
Illustrated by René Martin

No experience is more universal than death, yet little is written about it. We know that young people have questions about dying, but too often we have been reluctant to answer them. Now, in this pioneering book, Herbert S. Zim and his wife, Sonia Bleeker, discuss the physical facts, customs, and attitudes surrounding human life and death.

As introduction, the authors point out the variety of life on earth and indicate the range of lifespans found among animals and plants. They describe death as a part of living and tell what happens to the human body when it dies, how death is recognized, and what burial laws are followed. Customs vary the world over, and Dr. Zim and Dr. Bleeker have selected examples from peoples in Asia, Africa, and America to demonstrate the diverse ways each meets this common sorrow.

Read and approved by child psychologists, psychiatrists, and social workers, the text fills a widespread need. Dispassionate though sensitive, it concludes that people who lead useful, happy lives come to accept all of life, including its end.

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LIFE AND DEATH

HERBERT S. ZIM
SONIA BLEEKER
illustrated by
RENÉ MARTIN

William Morrow and Company New York

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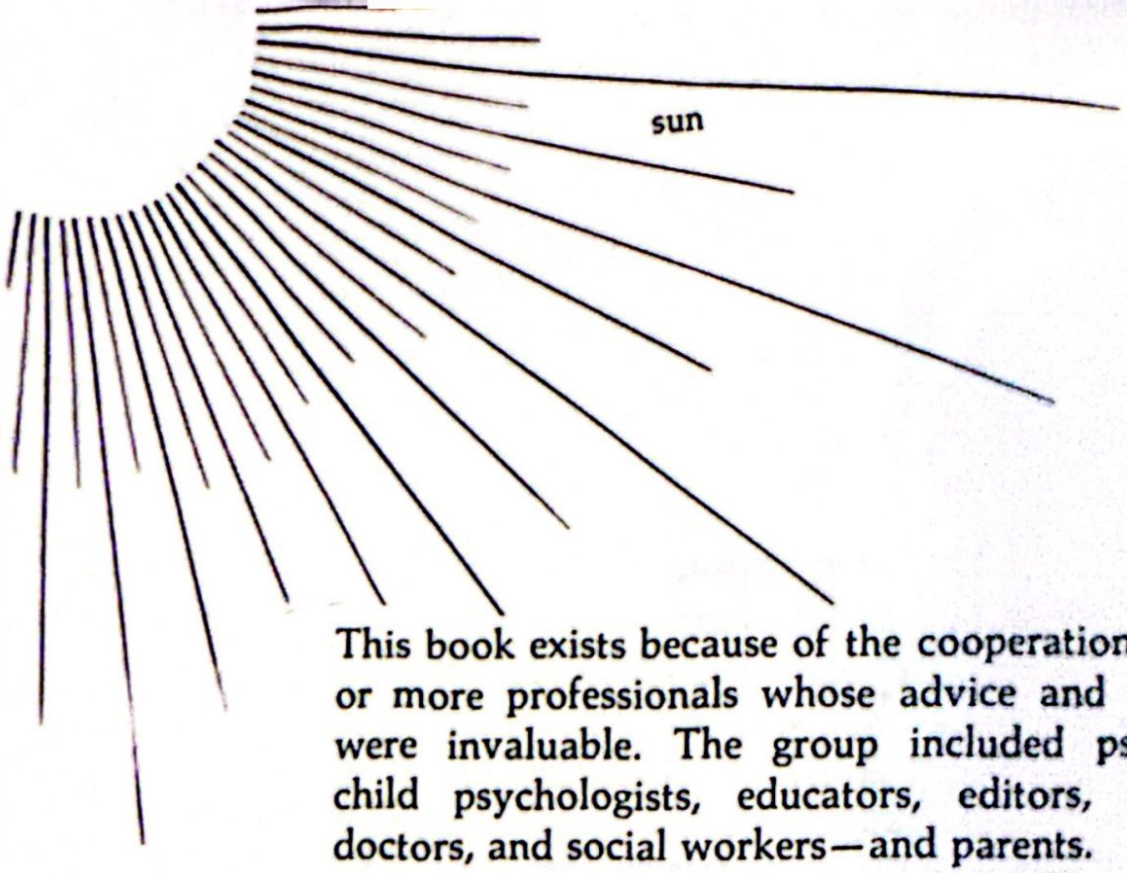

This book exists because of the cooperation of a score or more professionals whose advice and suggestions were invaluable. The group included psychiatrists, child psychologists, educators, editors, morticians, doctors, and social workers—and parents.

We specifically thank Dorothy Bennett, Edwin and Jean Duckles, Josette Frank, Rosamund Gardner, Cotter Hirschberg, James Lieberman, J. Stanley Marshall, Jan C. Parrish, David Polon, Betty Rallert, Robert E. Switzer, and Mike and Muriel Yoder.

H.S.Z. and S.B.

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moon

Earth

The small planet Earth that goes around the medium-sized star we call the sun may differ from all other planets in our entire universe: there is life on planet Earth. Since everything that lives must die, the Earth is also the only place where we are sure that death exists.

Life is the most remarkable thing on planet Earth. You and I, our friends and neighbors, and some three billion other people are alive. Moreover, we are only one kind of living thing. Over a million other kinds of living animals and more than a half million kinds of plants are known. Our planet teems with living things. To guess their total number is impossible.

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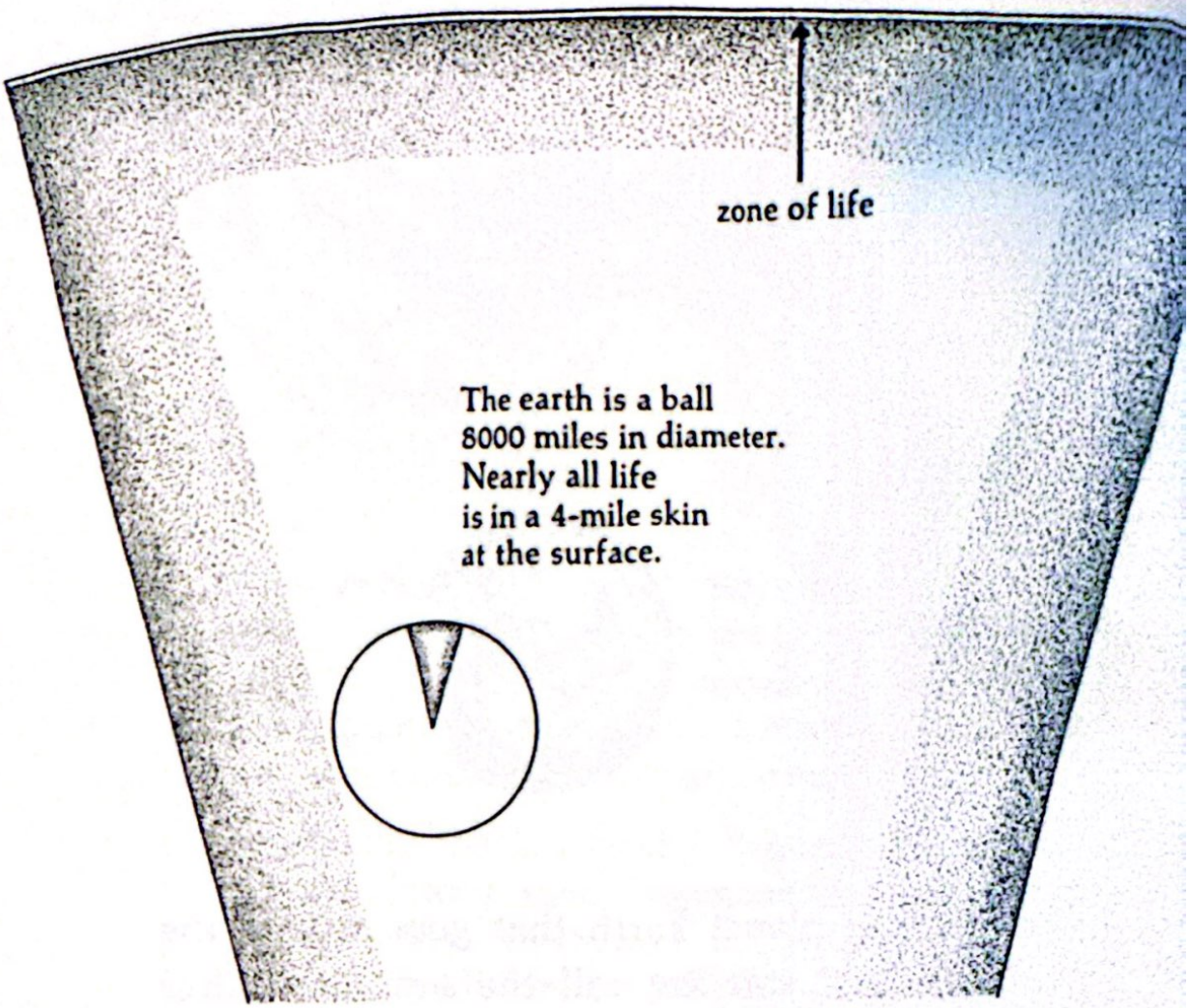

To be alive. What do those words mean? Listing all the different living things would be easier than to say clearly what life is. At any rate, life that we see all around us is scarce. The Earth weighs about 6600 billion, billion tons, but nearly all of it is rock. Living things are found in only a thin layer at the surface—a layer so thin you can compare it to the tightly stretched rubber of a large balloon. All the living things on Earth may weigh only about 500 billion tons—a tiny fraction of one percent of the earth's weight.

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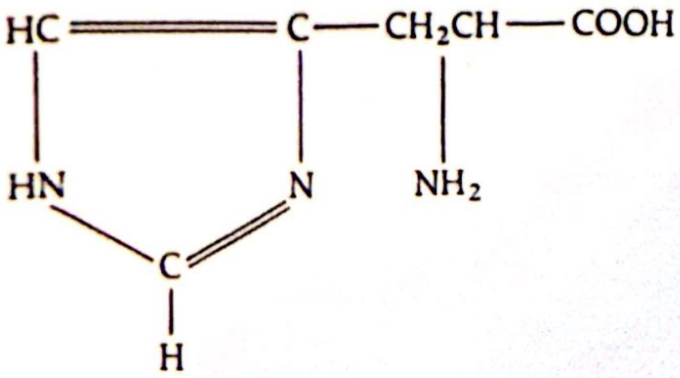
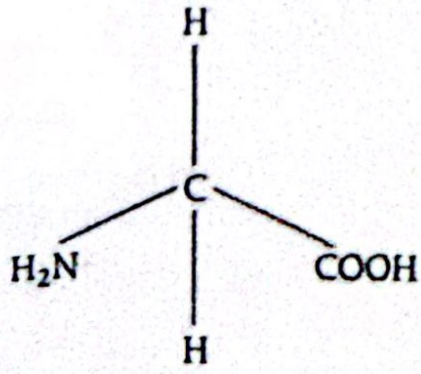
important elements in living things

P—phosphorus	N—nitrogen
Cl—chlorine	Na—sodium
C—carbon	K—potassium
O—oxygen	Mg—magnesium
H—hydrogen	Ca—calcium
S—sulfur	Fe—iron

two simple amino acids— the core of proteins— found in all living things



$C_6H_9N_3O_2$ histidine



NH_2CH_2COOH glycine

Living things are made of mainly half a dozen simple chemical elements—carbon, hydrogen, oxygen, nitrogen, sulfur, and phosphorus. But these elements often occur in such complex combinations that scientists have not yet learned to untangle or analyze all of them.

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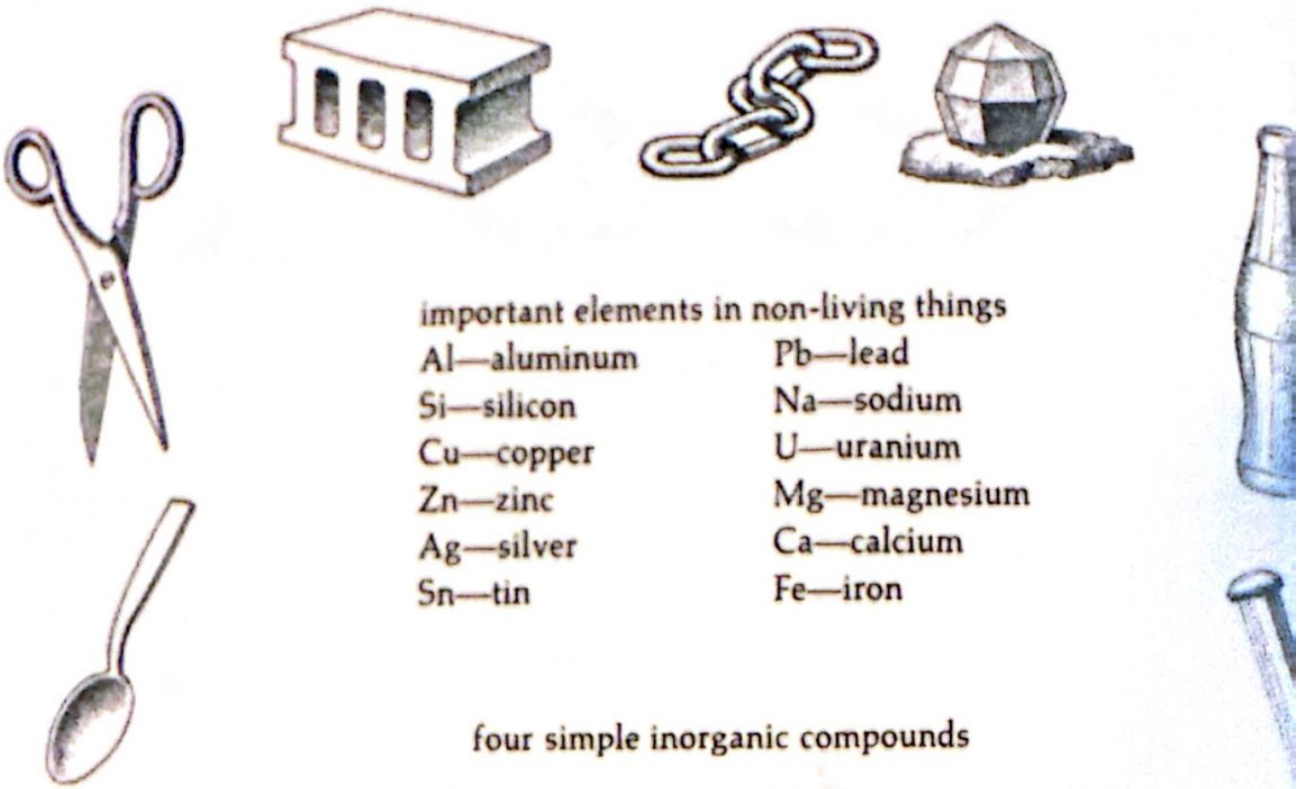

important elements in non-living things

Al—aluminum	Pb—lead
Si—silicon	Na—sodium
Cu—copper	U—uranium
Zn—zinc	Mg—magnesium
Ag—silver	Ca—calcium
Sn—tin	Fe—iron

four simple inorganic compounds

Na—Cl

NaCl

sodium chloride, or common salt

H_2O

water

O—Si—O

SiO_2

silicon dioxide, or silica

H—O—Ca—O—H

$Ca(OH)_2$

calcium hydroxide, or slaked lime

Non-living things commonly are made of chemical elements such as silicon, iron, aluminum, calcium, and sodium. Sometimes these chemicals are combined with oxygen, hydrogen, and sulfur. They usually form much simpler combinations than those in living cells.

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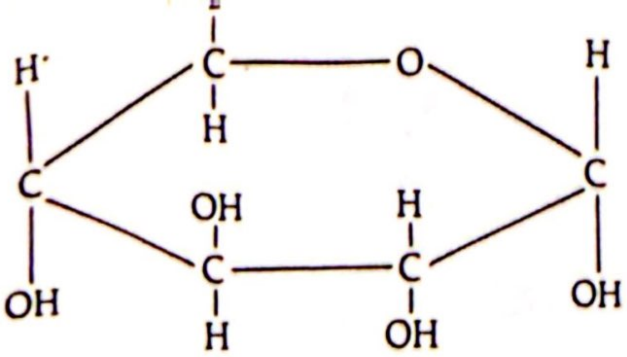
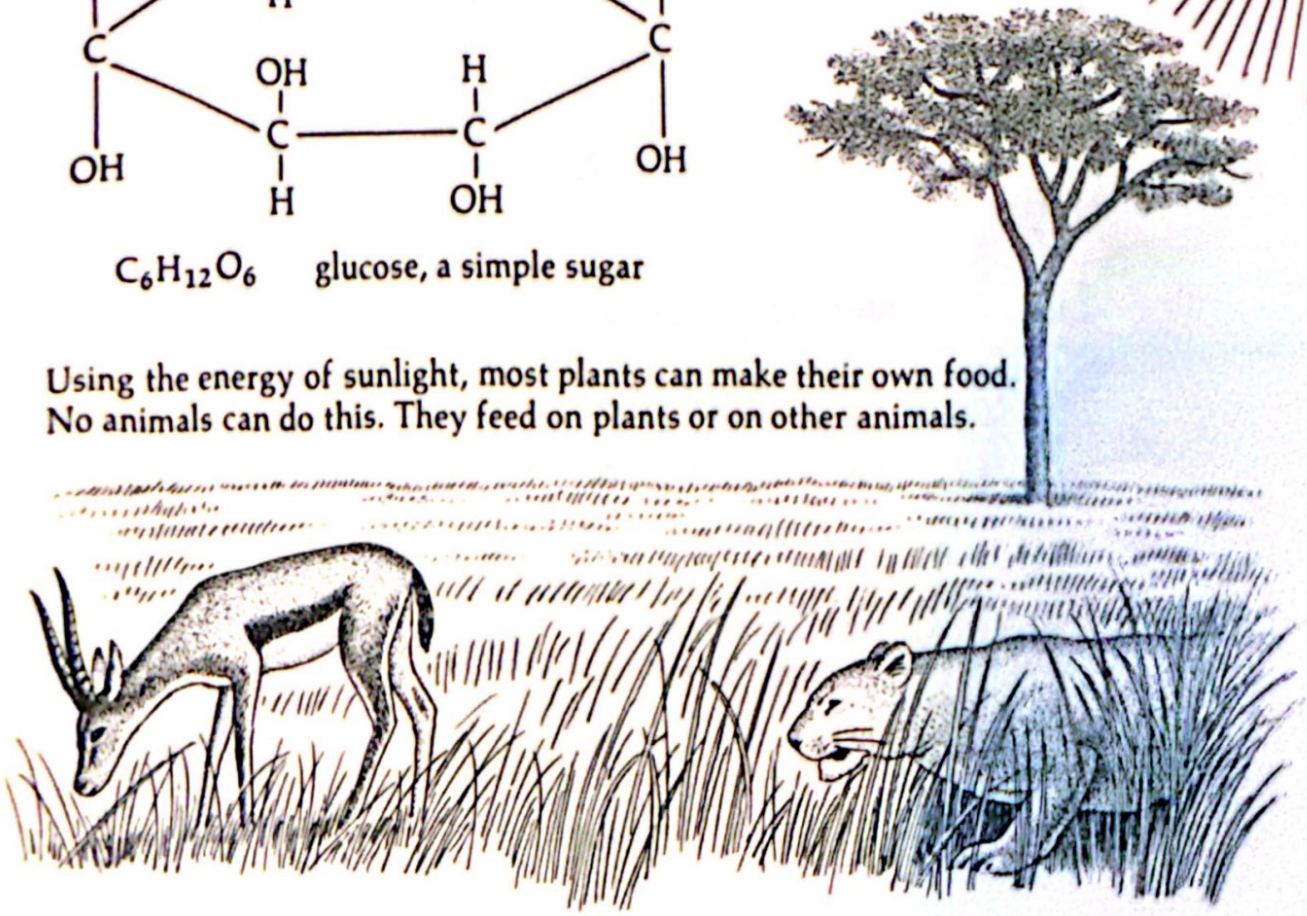


$C_6H_{12}O_6$ glucose, a simple sugar

Using the energy of sunlight, most plants can make their own food. No animals can do this. They feed on plants or on other animals.



It is easier to tell living things by what they do than by their chemical makeup. Most important, the cells of living things take in food chemicals that they make a part of themselves. A peanut-butter sandwich, an apple, or an ice-cream cone soon becomes a part of you. The chemicals from these foods become part of your blood, muscles, and brain. All living things need food. Green plants and a few other plants can make their own, but animals cannot. So animals and men eat plant and animal food to build their own bodies.

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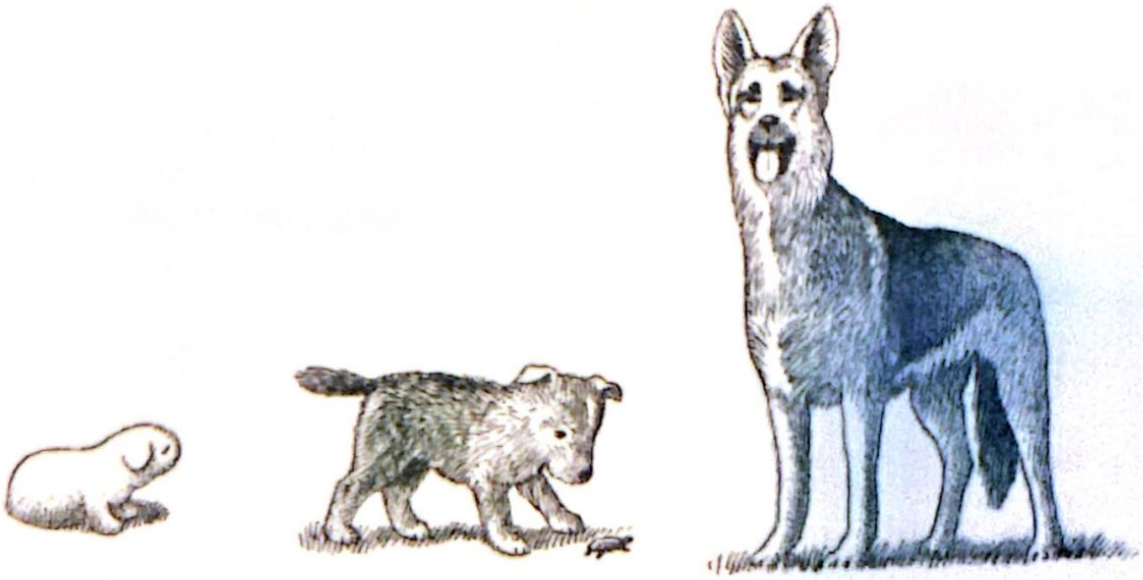
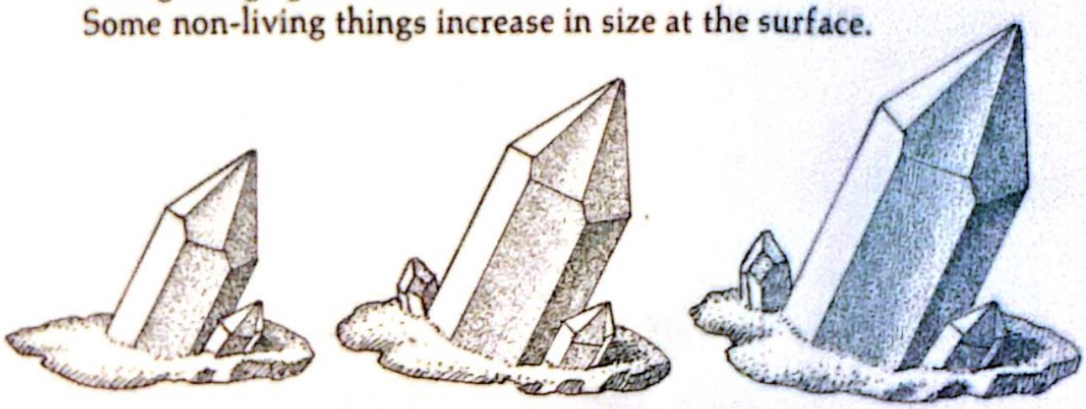


newborn puppy full-grown dog

Living things grow from within.
Some non-living things increase in size at the surface.



small larger larger quartz crystal

Living things break down some of the chemicals in the food they take in. Thus they get energy with which to move and to respond. Food is used to repair and rebuild tissues and for growth. Within limits, each growing part becomes larger, and so does the whole plant or animal. This kind of growth (from within) is found in all living things—including you.

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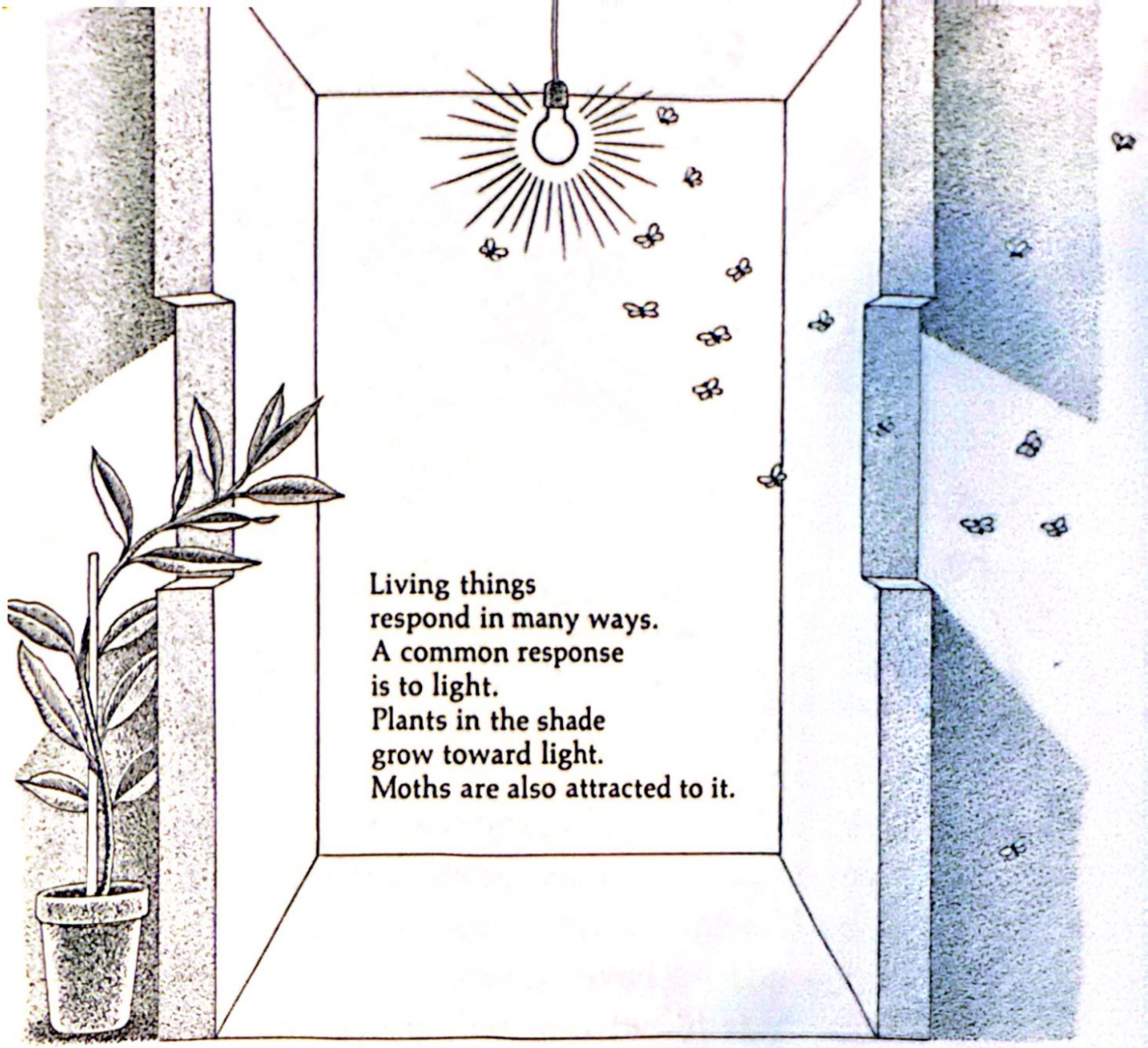

Living things react or respond to the world around them. Plants respond quite slowly. A plant in deep shade twists and grows toward the sunlight. Animals respond more rapidly, because they can move. They move toward things they like or want and move away from enemies or danger. Animals react to light, touch, temperature, sound, and other sensations.

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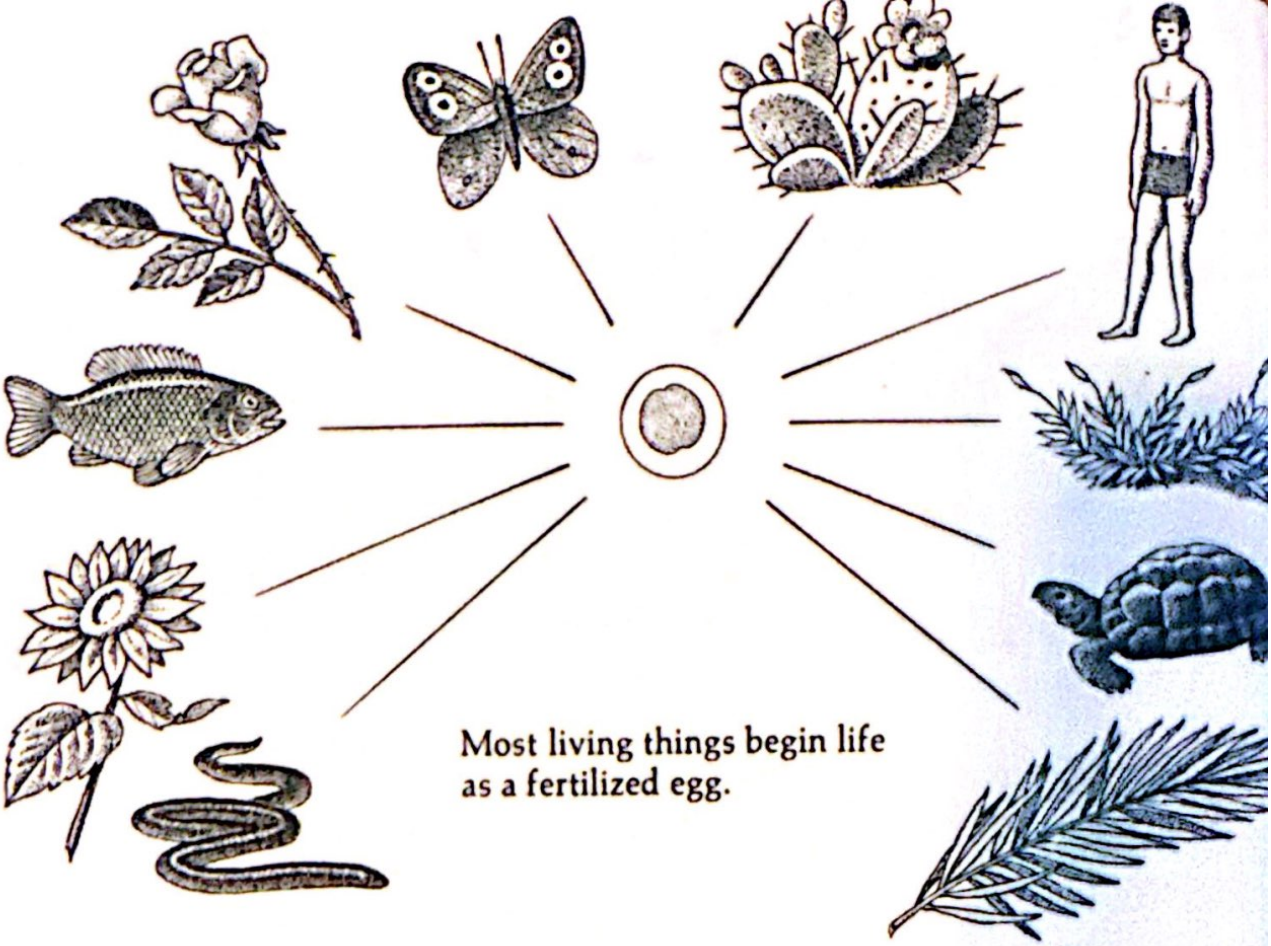

Most living things begin life as a fertilized egg.

All living things reproduce. Simple kinds divide—in half or many times. Each piece grows to be like the parent. Other living things produce seeds or have young in several different ways. A fertilized egg cell grows and divides. Depending on the parents, it may become an apple tree, a butterfly, a puppy, or a baby.

The young of plants and animals look like their parents, although they are never exactly the same. These little differences between young and their parents have made small changes in each generation. The many small changes, after thousands and millions of years, account for all the great changes in life on planet Earth.

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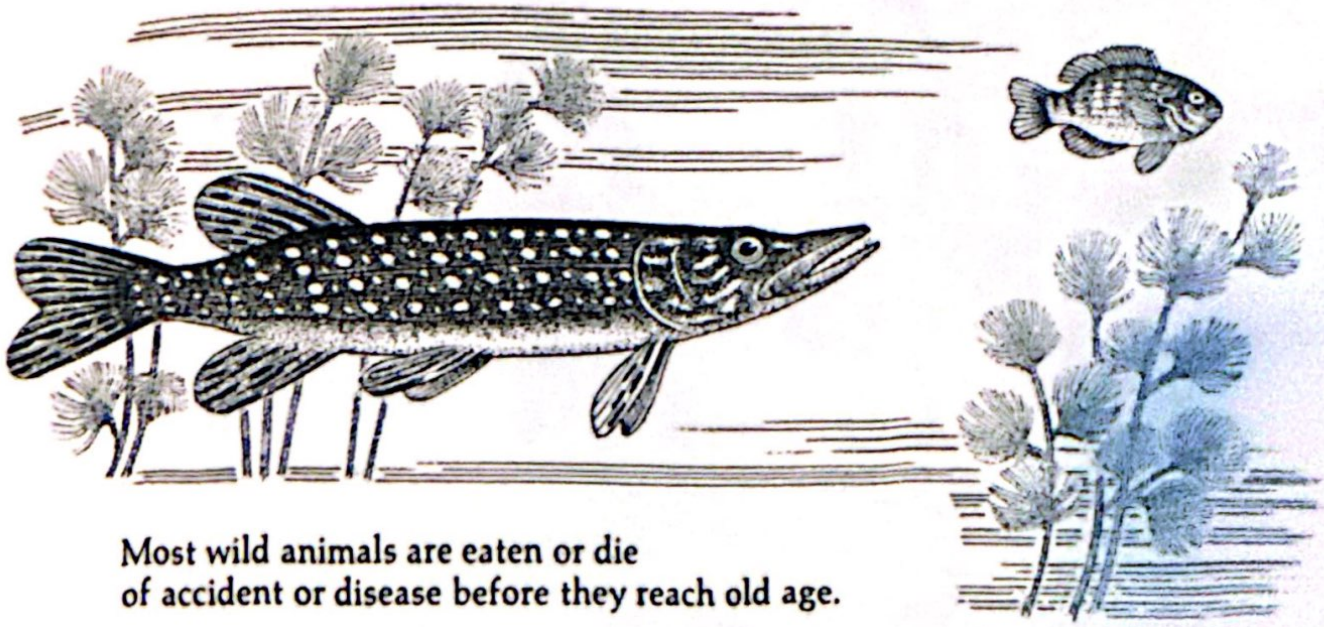

Most wild animals are eaten or die
of accident or disease before they reach old age.

In time, each life must come to an end. Aging, the process of growing old, continues day by day. Then each living thing stops living. A weed, a tree, a worm, a fish, a bird, a dog, a man—all die sooner or later. Most wild animals die before they reach old age. Man is one of the few animals that may live out his full life, although in many parts of the world this often does not happen.

While every single living thing dies, life as a whole has continued on our Earth for well over two billion years. Most living things reproduce before they die. So even though countless millions upon millions of living things have died, life continues in their young. Living things are born, grow up, mature, age, and die. Life and death go hand in hand. Death is thus a part of life and a part of living.

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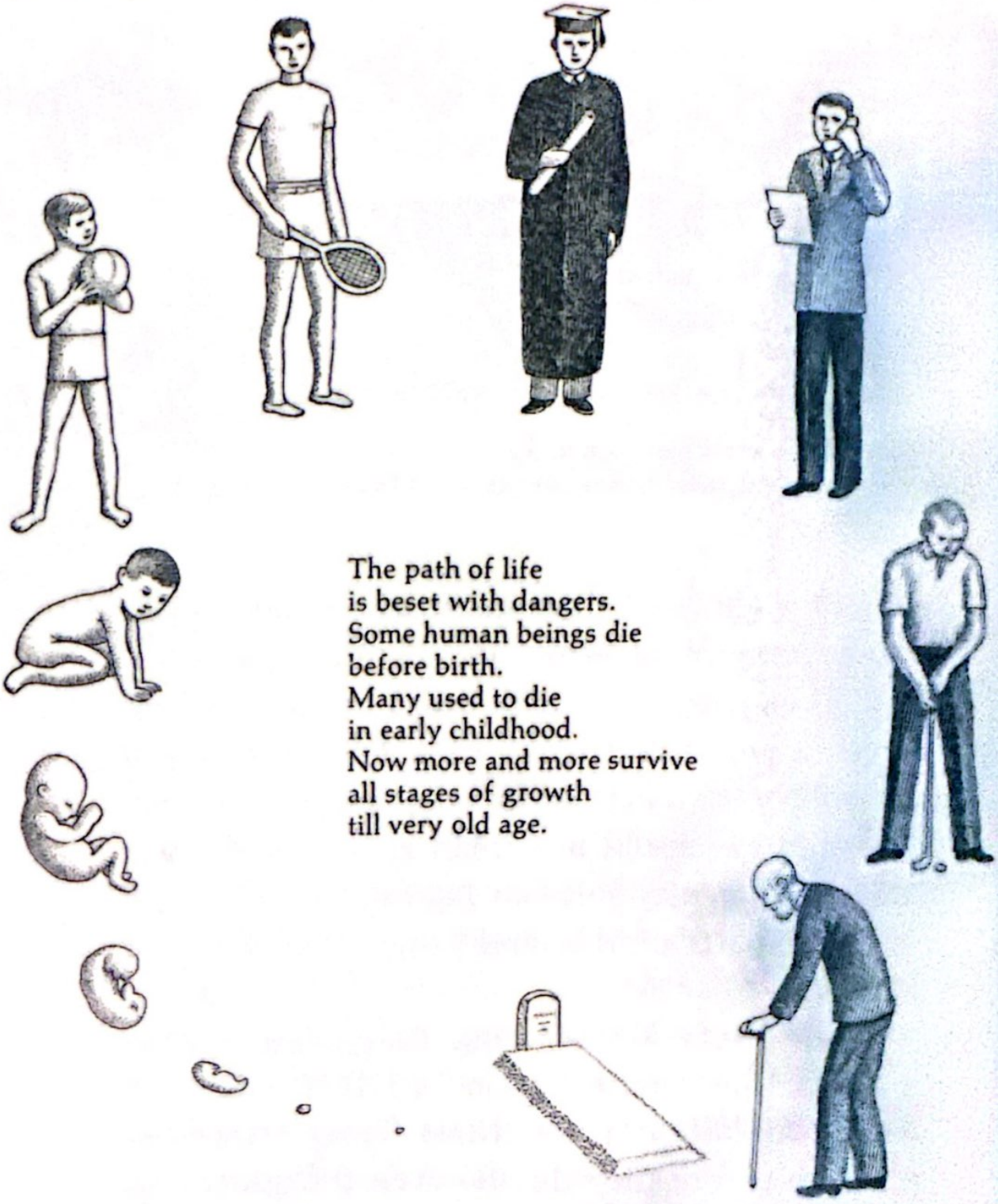

The path of life
is beset with dangers.
Some human beings die
before birth.
Many used to die
in early childhood.
Now more and more survive
all stages of growth
till very old age.

The end of life is only a question of time. We do not expect babies or children, or even their parents to die, but we know that grandparents do. How long do living things live?

The lifespan, or length of life, of some plants is almost unbelievable. Bristlecone pines in the Rocky Mountains are known to live about 3000 years and the giant redwood for about 2000. Many other trees live 300 to 500 years or more. But there are also plants that sprout, grow, bloom, and die in only a month or two.

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Many figures of lifespans are difficult to check. There may be a large possibility of error.

animals whose longest recorded lifespan is under 100 years

shrew	2 years	ostrich	40
rat	4	herring gull	40
earthworm	10	horse	45
rabbit	15	hippopotamus	50
frog	20	alligator	60
dog	25	clam	60
tern	27	halibut	70
cow	30	Indian elephant	77
cat	30	eagle	80
gorilla	35	parrot	85
pigeon	35		

Thousands of animal species, too, live for only a short time. The life of some insects is measured in weeks. Others may live for years. Often the smaller animal has the shorter lifespan. The tiny shrew lives for less than two years. Mice and rats live for about twice as long. Dogs live for about twelve years. Larger animals may live longer.

Elephants are reported to have reached the age of 80, the armored rhinoceros, the age of 50, and the giraffe and the grizzly bear the age of 30. Scientists guess that the great blue whale may live for 50 years. There is no reason for thinking that the great dinosaurs, largest of the land animals, lived any longer.

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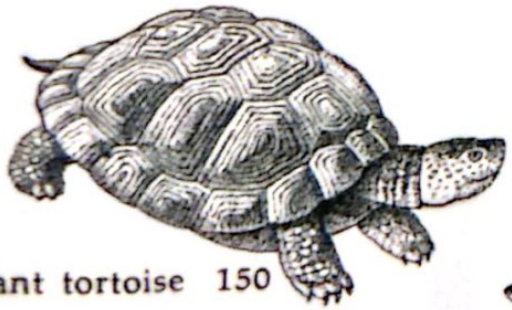
animals whose longest recorded lifespan
is 100 years and over

vulture 117

human being 115



giant tortoise 150

sturgeon 100

However, the largest animals do not always live the longest. Man, who is not very large, lives longer than elephants and whales do. People may live for a hundred years, and a very few even longer. The giant tortoises and a few other kinds of turtles are among the small number of animals whose lifespan is longer than man's.

In spite of all our studies, we still know very little about how long animals live in the wild. Even zoos do not have enough records. Only after animals have been studied for a number of years do scientists come up with enough information to figure out their average lifespan. In some parts of the world, we do not know enough about the average age at which people die.

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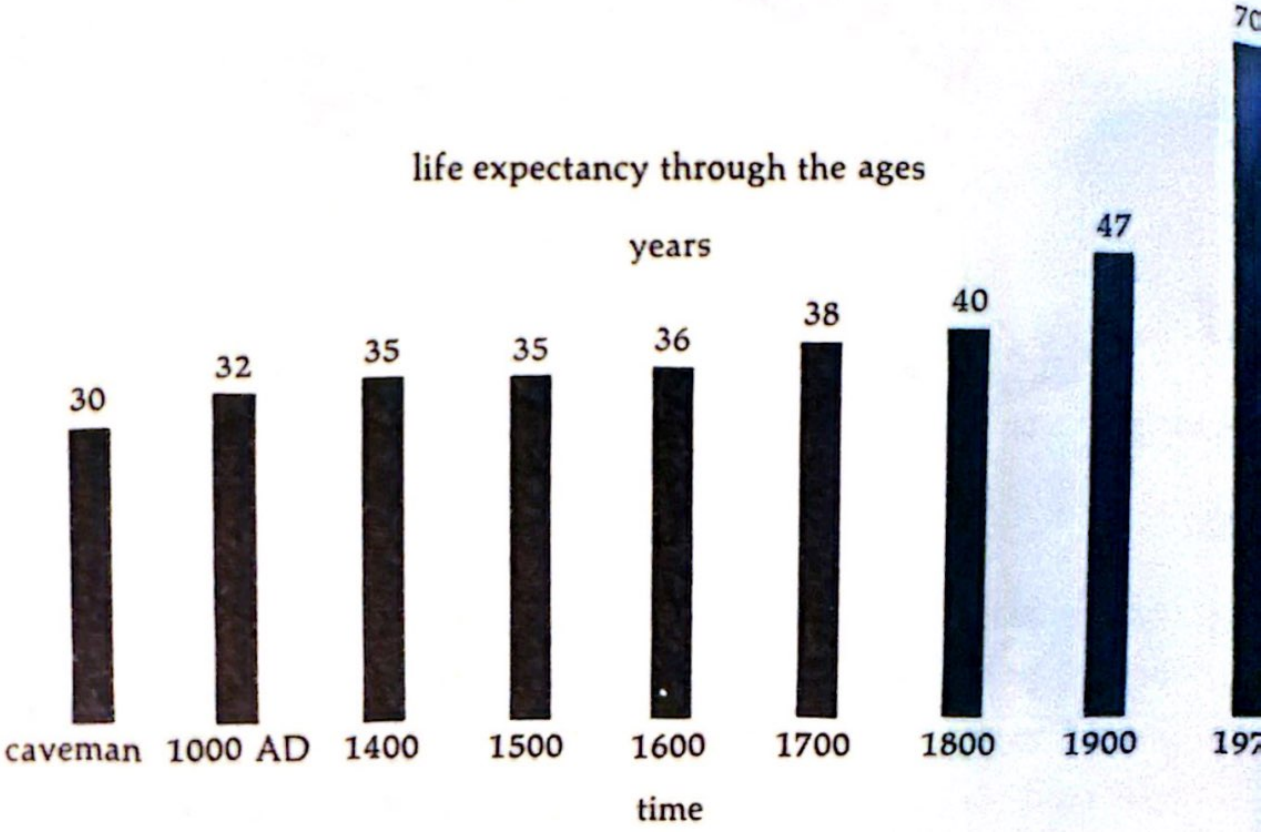
Life expectancy has increased
mainly by reducing the death rate of infants.
In addition, the conquest of infectious diseases
like cholera, tuberculosis, and smallpox
has about doubled life expectancy.



This average length of life is called life expectancy. It is best known for man. Yet only in Europe and America are there the many millions of life records needed for accurate prediction. Therefore, the best life-expectancy figures come from these two areas.

A person born about the time of Columbus had a life expectancy of only 30 to 35 years. By the year 1900, life expectancy had increased to 47 years. By 1950, it was up to 68 years, and

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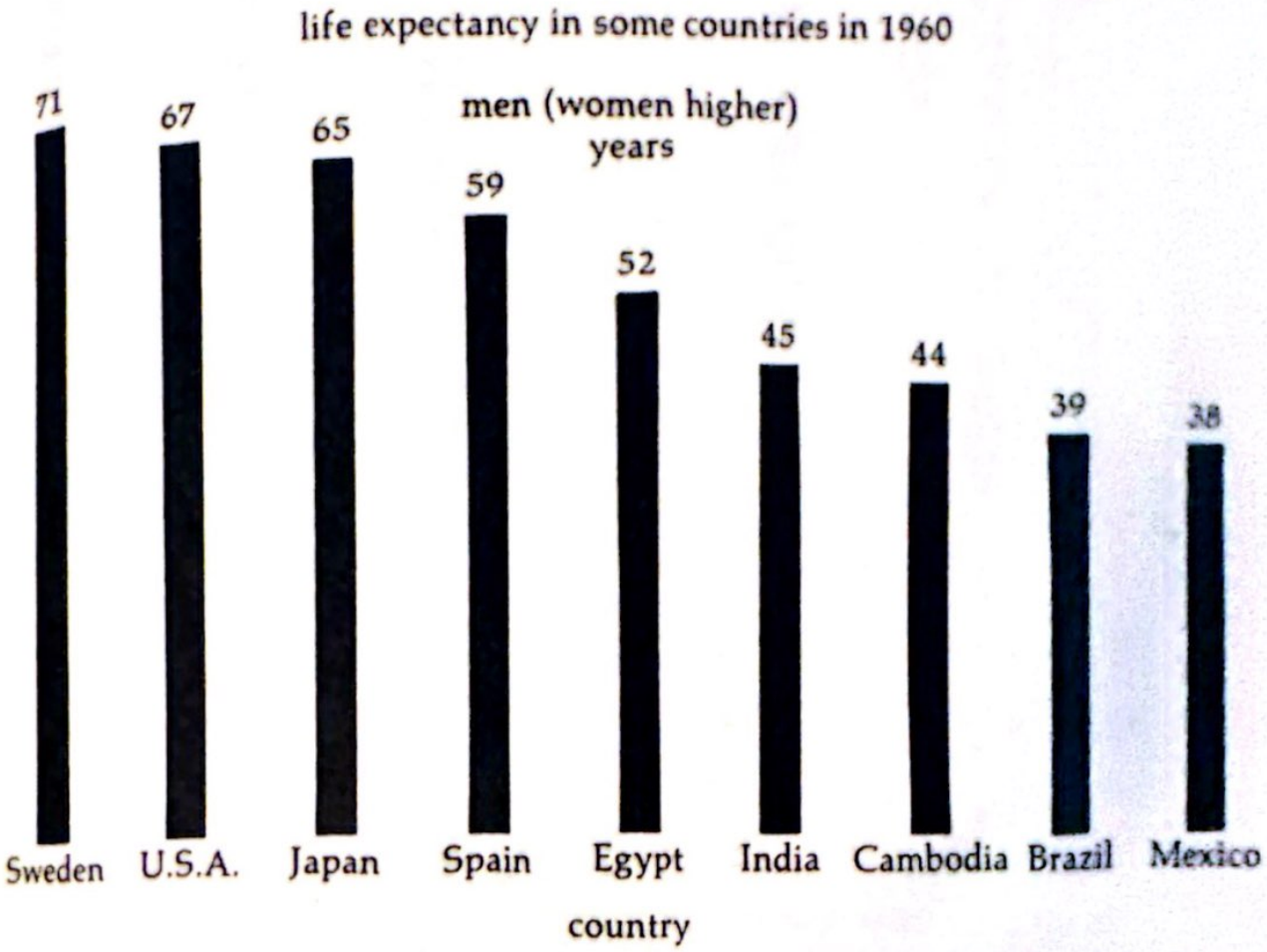
Life expectancy differs from place to place.
In some smaller and less wealthy countries,
life expectancy is greater than in the United States.



now in much of Europe and North America it is a bit over 70 years.

These figures do not tell the full story. Throughout history women have lived longer than men by at least two or three years. More food and better medicines have increased life expectancy in some parts of the world more than in others. In a wealthy country like the United States, the life expectancy of poor people is less than that of those with better food, housing, and medical care.

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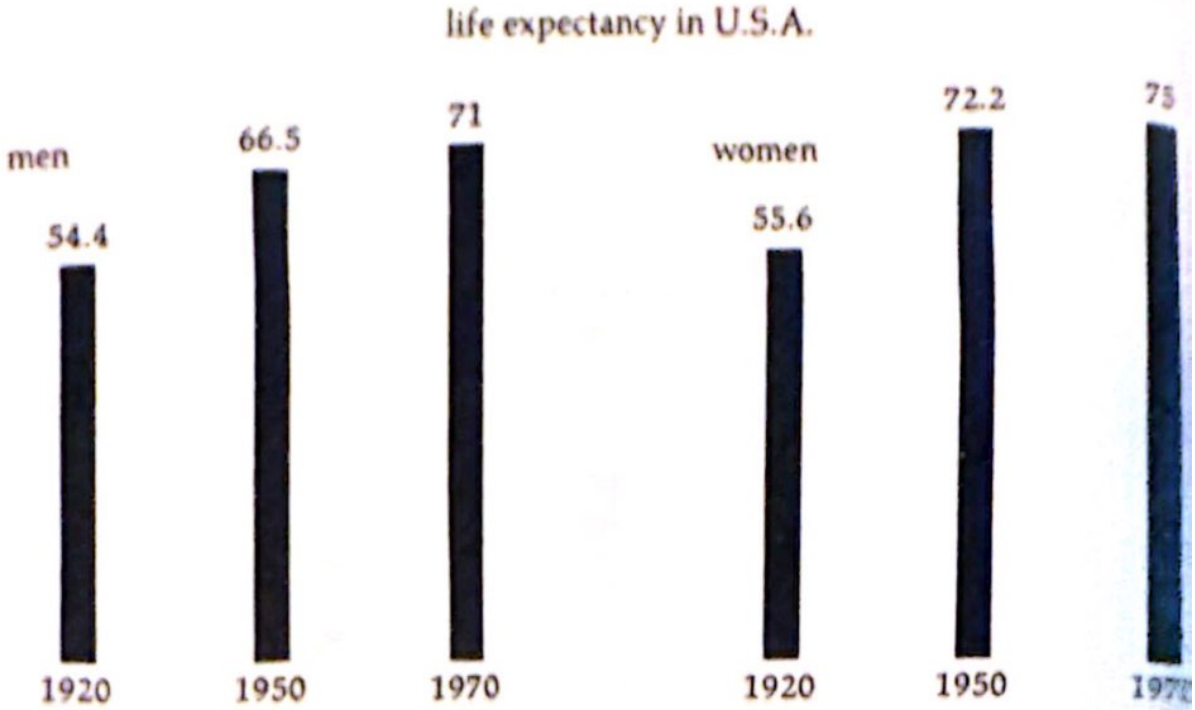

Life expectancy figures tell us that an average boy born in 1970 in the United States can expect to live for nearly 71 years and a girl for nearly 75 years. But these figures are only averages. They only foretell chance or probability; they cannot predict how long you or any single person will live. You cannot tell if you are average, near-average, or quite different. Of course, young people are likely to have more years of life before them than older people. The longer one lives, the closer one comes to the end of life.

No one knows why each different kind of living thing has a different life expectancy, or why the life expectancy of one kind of animal should be much greater than another's.

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Both life and death have to be understood together. With death, all of the life processes, such as growth, movement, awareness, and reaction, stop—finally and permanently. Even if your experience has been only with a dead bug, a dead bird, or a dead dog, you know that when an animal dies it can no longer move, feel, see, grow, or do any of the things that add up to being alive.

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Long ago people had the idea that death was like a long sleep. Children think so too. This belief is far from the truth. A sleeping animal or a sleeping person is alive. He breathes, his heart beats, he moves, dreams, and will react to a touch or a poke. Someone who is dead does none of these things.

An injury or sickness can sometimes make a person unconscious. A person may faint or fall into shock or into a coma, which is a deep loss of consciousness. An unconscious person does not respond or react. He has no sensations, but his life processes continue. He breathes and his heart beats. If fed, he digests the food. Being unconscious is far from being dead.

Most of the time death is recognized easily, because all the actions that belong to life have stopped. If an injury or disease causes one important life function to cease, the others quickly stop too.

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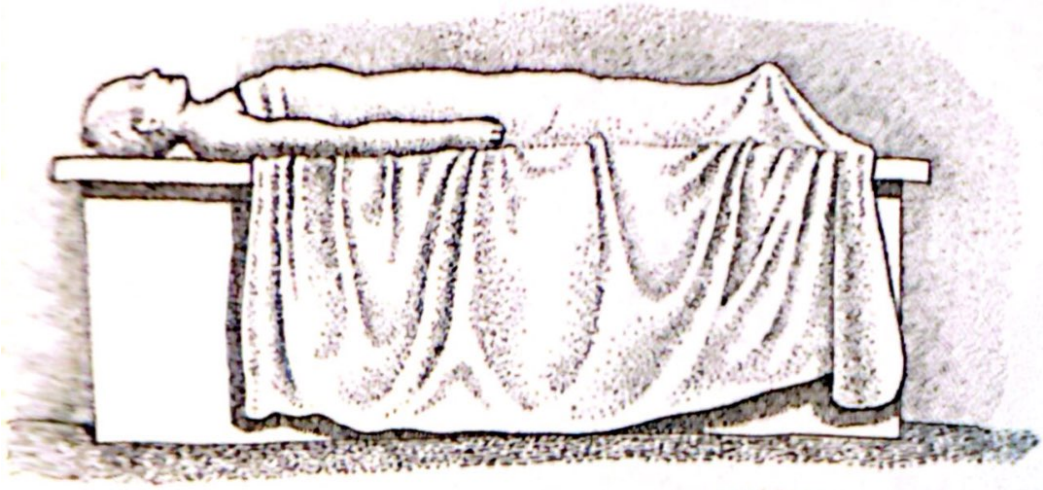
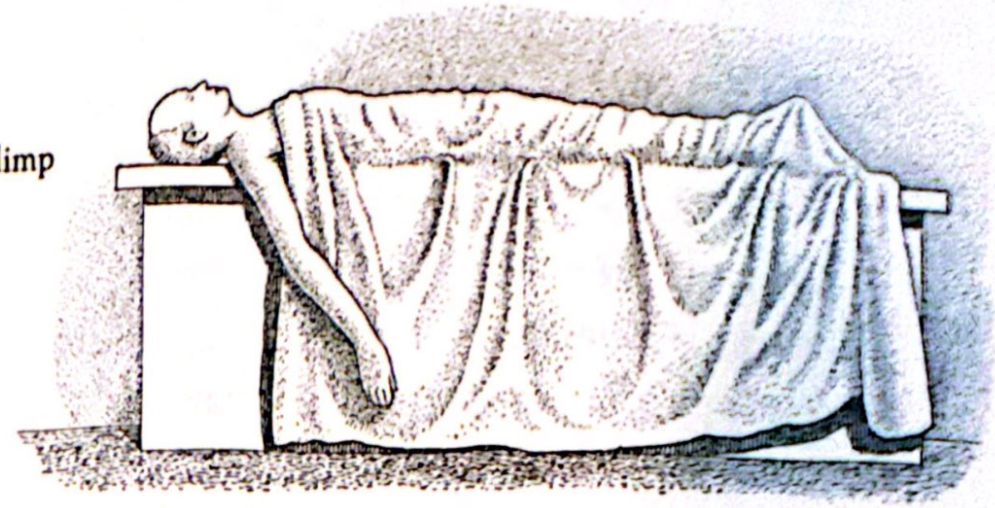


body in
rigor mortis



body limp

When a person dies, his heart stops beating, breathing stops, and the dead person no longer reacts or responds. As a person dies, movement ceases and all other life functions stop too.

After death, a person's temperature drops rapidly. The skin feels cold to the touch. The blood, which no longer circulates, settles and may appear as bluish patches under the skin. After several hours the muscles of a dead person contract, and the body becomes stiff. This condition is called *rigor mortis.* Later the dead muscles relax, and the body becomes limp again.

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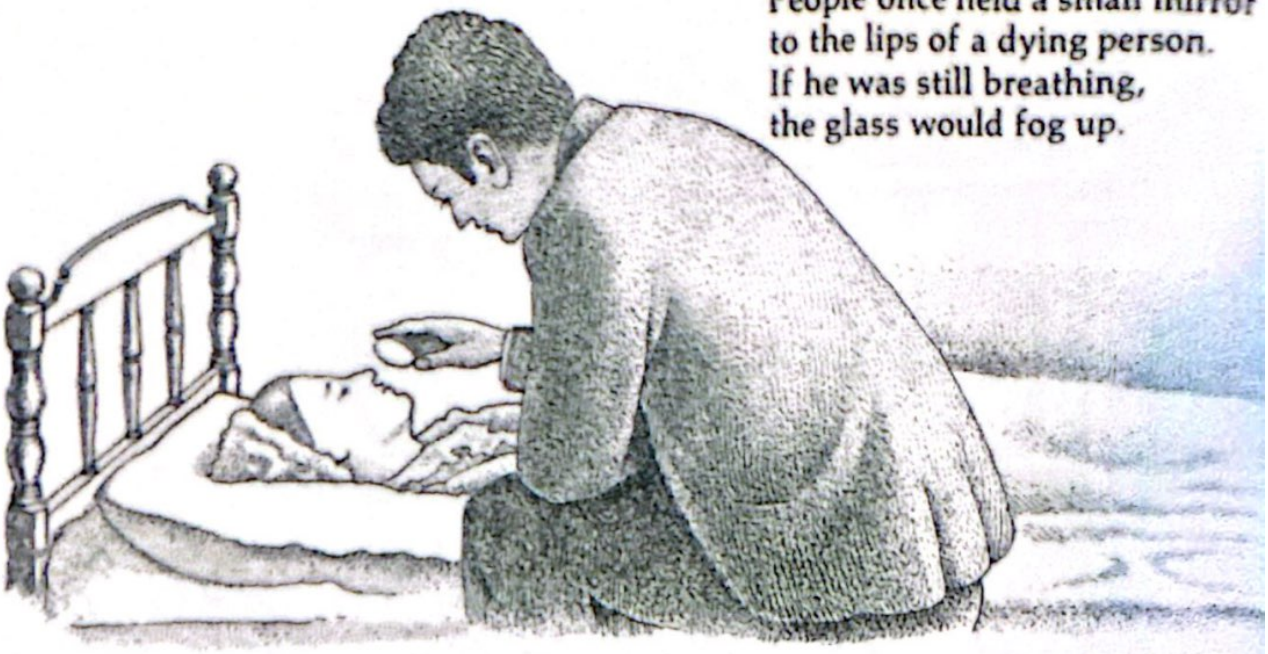

People once held a small mirror to the lips of a dying person. If he was still breathing, the glass would fog up.

Because the human body is made of billions of living cells, death nearly always occurs in stages. As the heart stops beating and the blood stops circulating, cells in all parts of the body soon die. They cannot live without the oxygen and the food that the blood supplies. But the time of dying may be measured in minutes, hours, or even days.

Long ago people used simple ways to tell if an ailing person had died. If breathing had stopped, a feather placed on the lips would not move nor would a mist form on a mirror. If the doctor's ear could not detect a heartbeat or his finger the push of the pulse, he announced that death had occurred. Today doctors have better means of checking. They want to be very certain not to make any mistake before pronouncing a person dead.

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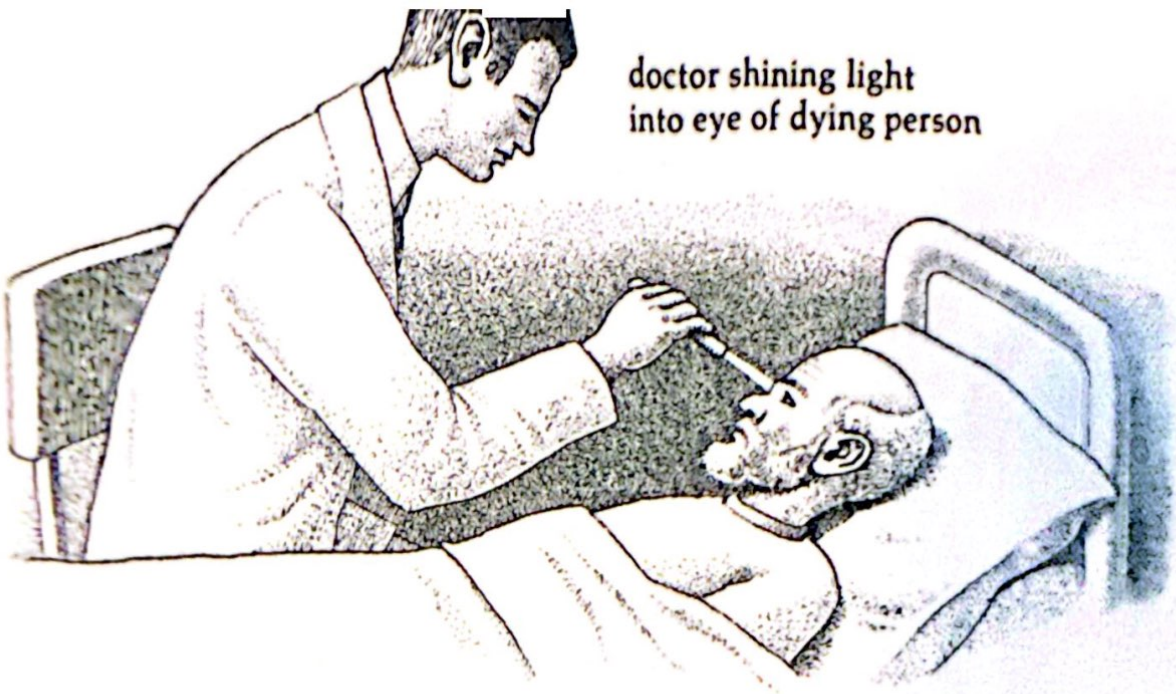

doctor shining light
into eye of dying person

Committees of doctors have agreed on tests for death. The person does not respond by sound or movement to anything painful such as a pinprick or a hard pinch. There is no reaction to heat or cold. When a strong light is pointed into the eye, the pupil does not contract. No muscle moves. If breathing is aided by a machine, the person does not breathe when the machine is turned off.

Doctors tap arms and legs to test reflex responses. Upon death, reflexes stop and the tapping brings no response. Nor does the body respond with actions that we do without thinking, like yawning, blinking, or swallowing.

All of these failures to react point out that nerves are not carrying messages to and from the brain. Thus, a final test for death is the failure of the brain to respond—"brain death."

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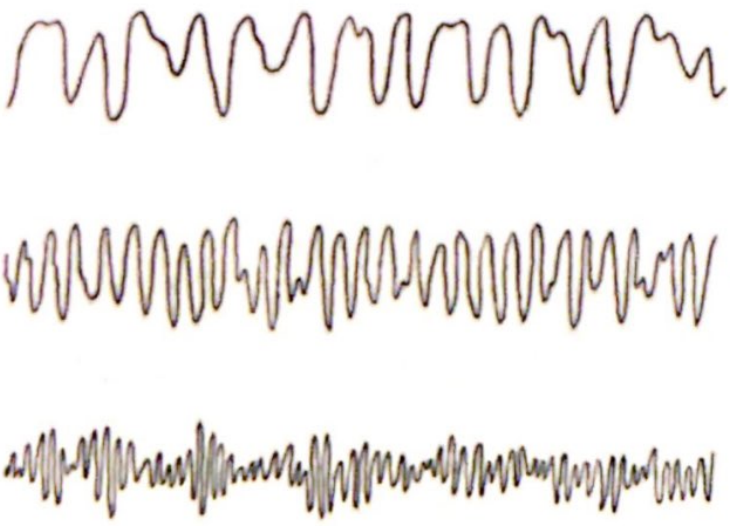
some kinds of brain waves



All during life the brain constantly sends out several kinds of brain waves. They vary with sleep and wakefulness, with activity, and with sickness and health. Some brain waves are forming every moment you are alive. Upon death, brain waves stop. But if brain cells are still using oxygen, they are still alive even if no brain wave appears. This condition is rare. If brain waves stop and do not appear in 24 hours, death is certain.

A sensitive instrument is needed to detect and measure brain waves. The use of this machine to confirm death is not needed usually. A doctor can usually tell without doubt and without long testing if a person is alive or dead.

Until recently the exact time of dying was

not of great importance. Now that doctors have begun to transplant kidneys, livers, eye lenses, hearts, and other organs, they are looking more closely at the process of dying. It is now possible to keep a heart alive by machine action after a person has suffered "brain death." The process of dying cannot be reversed for such a person. He cannot be brought "back to life." If the heart-lung machine were stopped, the heart soon would stop beating, too.

According to law, a person is dead when a doctor checks and says he is, and doctors do not often make mistakes. But in a few rare cases, a person who has been called dead or who is assumed to be dead is noticed to move or show some other sign of life. Quick medical attention may save him. But one should not think that he has been "brought back from the dead." He never was dead at all, though some life functions were faint or had stopped.

Restoring a dead person to life may sound like a dramatic story. But when disease or injury destroys the life processes, they do not have a basis for starting up again. A doctor who has checked and pronounced a person dead knows the process of dying is complete and irreversible, and a life has passed away. No one who is really dead can be made to live again. No story of a person thought dead and buried alive by accident has ever been proved true.

For centuries men have asked why living things must die. There is no good answer except that the very nature of life also includes death. We have reduced the number of deaths from accidents, injuries, and from some diseases. Medical research has progressed, and people today live long as a result. But putting aside these causes of death, all living things show the effect of aging.

Aging is a universal process that is not understood well. It is not a disease. But as a person

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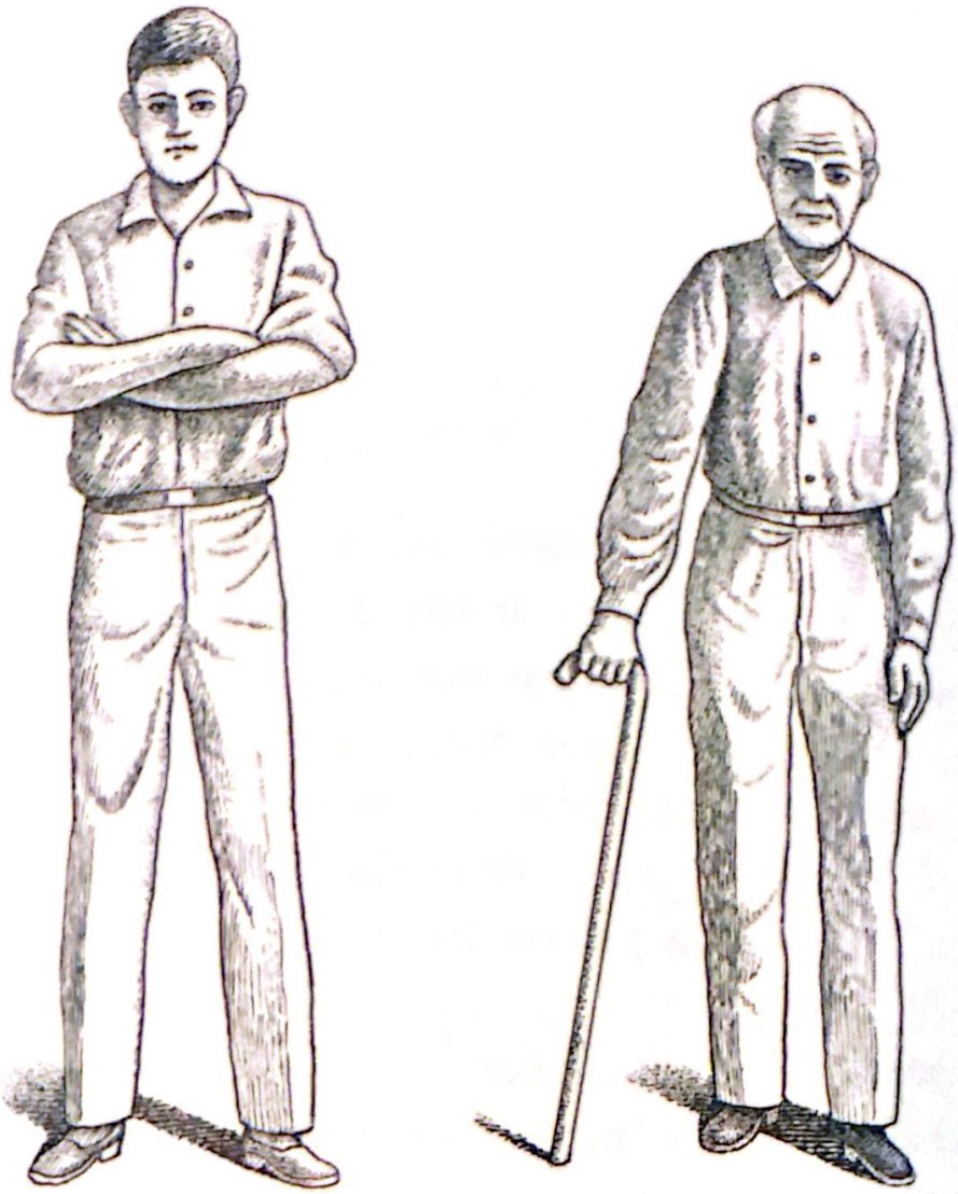

grows older and passes maturity, the cells of the body, and the organs they form, function less well. The body wears down faster than it grows and repairs itself. Hair turns gray or white. The skin wrinkles, and muscles lose their strength. Old people actually shrink in height. The body provides less protection against disease and is more prone to accident.

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A number of related causes may contribute to aging. Some cells of the body have a fairly long life, but they are not replaced when they die. As a person ages, there is a decrease in the number of brain cells and muscle cells. Other body cells die and are replaced by new cells. But in an aging person the new cells that form may not be as viable, or capable of growth, as those of a young person. The replacement cells are not as good "copies" as the ones made earlier in life.

Another factor in aging may be changes within the cells themselves. Some of the protein chemicals in cells are known to change with age and become less elastic. This change is why the skin of old people wrinkles and hangs loose. There may be other more important chemical changes in the cells. Some complex cell chemicals, like DNA and RNA, store and transmit information that the cells need. Aging may affect this

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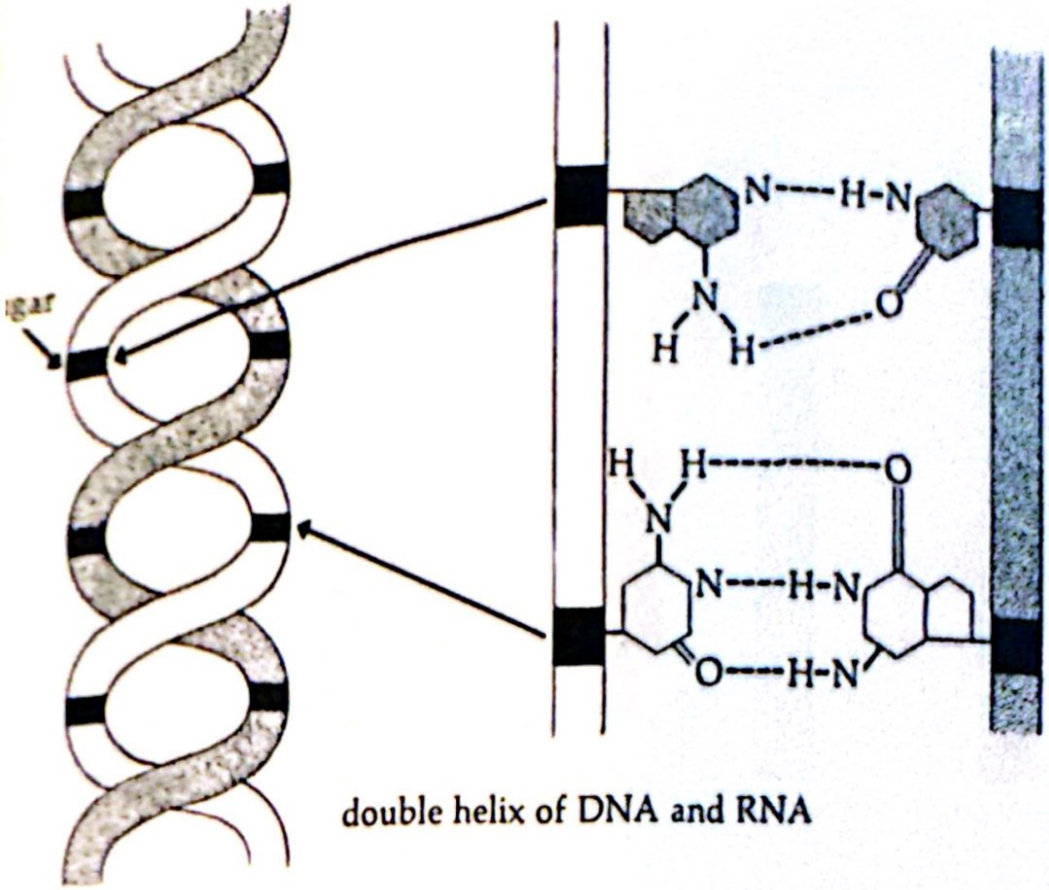

double helix of DNA and RNA

process and change the information-carrying molecules, so they do not work as well. The study of aging has only just begun.

Some people die of old age. Doctors find the exact cause of their death hard to determine. Like death, aging is an irreversible process. There is no chemical or medicine or secret way that people can be made young again. There is not even a sure way to slow down aging.

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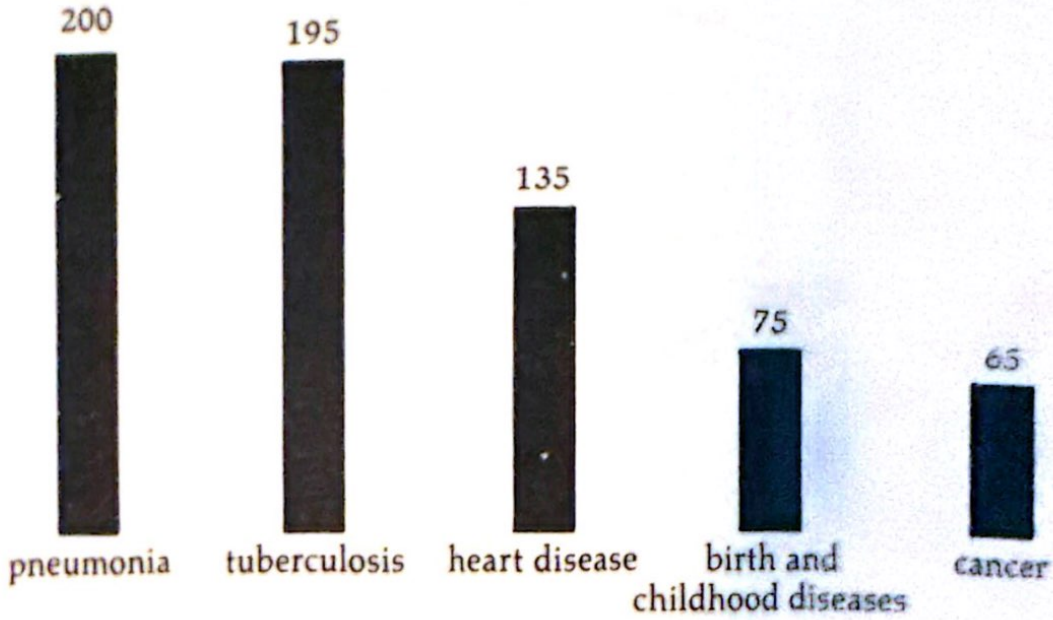
some common causes of death in 1900
per 100,000 people



However, doctors do try to find out and record the exact cause of death. Since about two million people die in the United States each year, doctors have compiled thorough records. The major causes, of course, have changed with the years. Diseases that were a frequent cause of death 100 or even 50 years ago, like tuberculosis, pneumonia, and cholera, now cause only a few deaths. Other diseases have become more dangerous and are on the increase.

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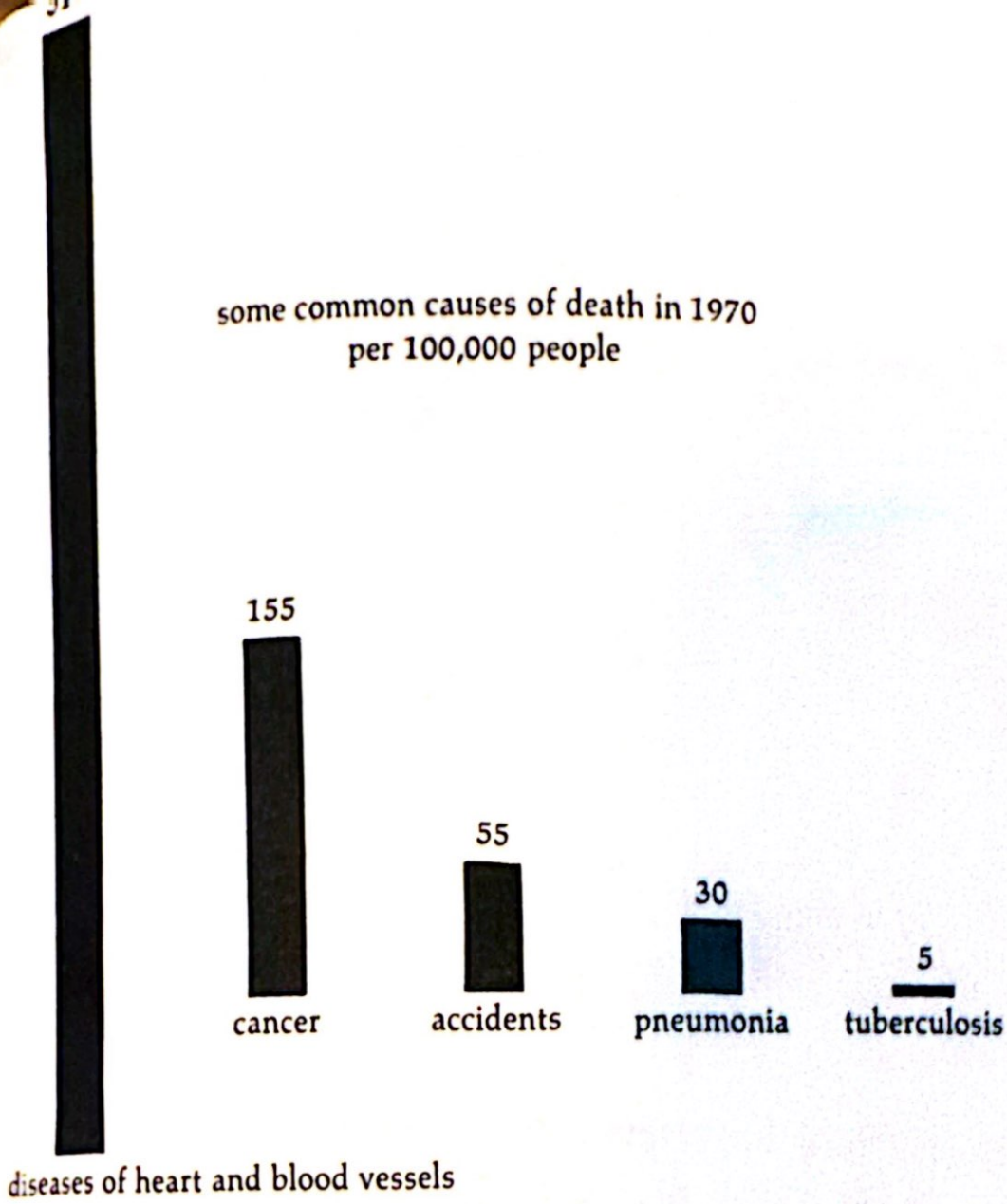

Over half the people who die in the United States each year die of diseases of the heart and blood vessels. The second most important cause of death is cancer—a group of diseases in which some of the body cells grow abnormally, out of control, and hinder the work of body organs. Accidents, especially automobile accidents, are a common cause of death among young people.

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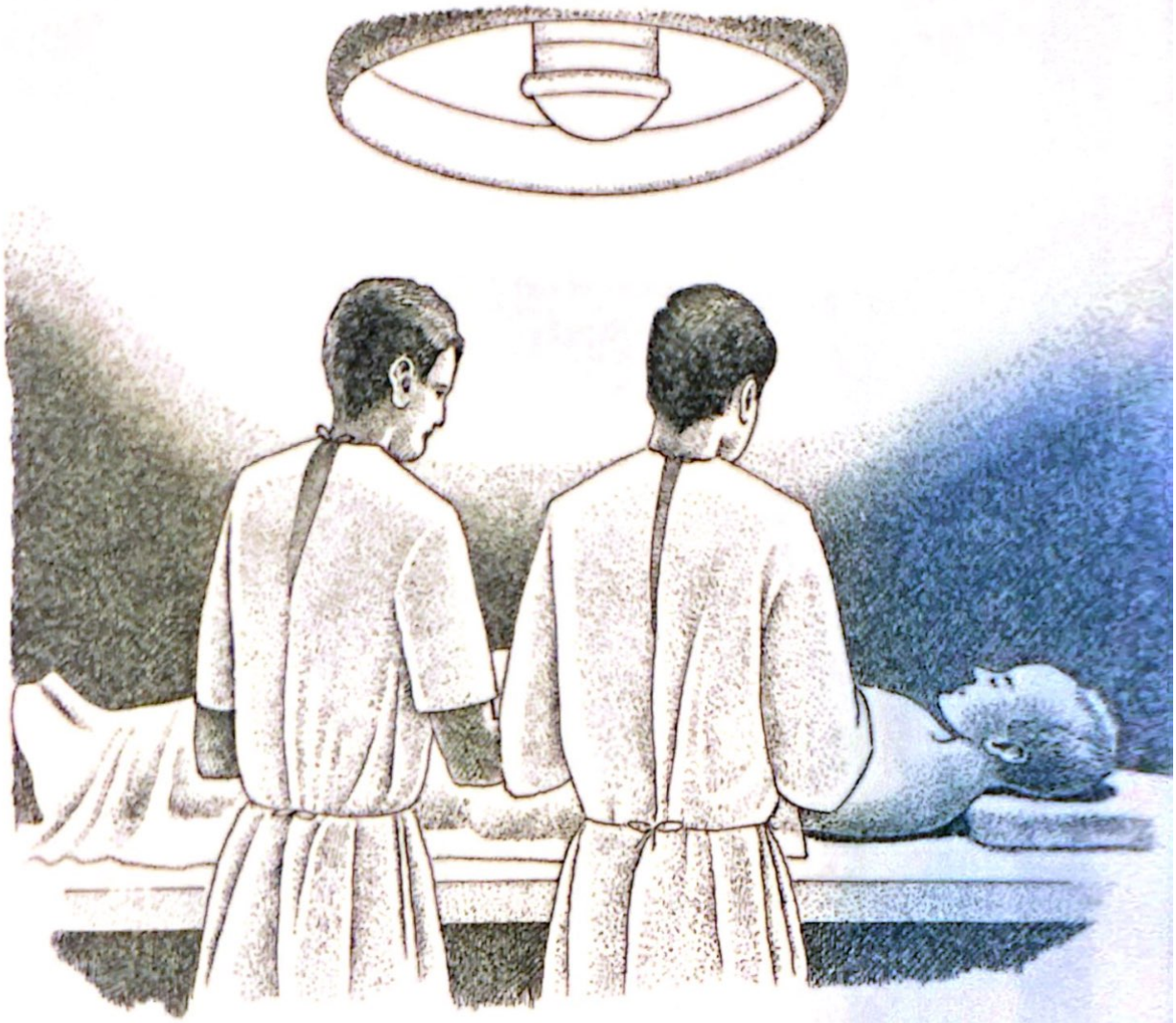

For a long time, doctors often had to guess at the cause of death. Nowadays, if there is a question, or if doctors need more information, they ask for permission to do an autopsy. In an autopsy, the doctors cut open the body and examine the organs with care. They study tissues under a microscope. Thus they can establish the cause of death more clearly and learn more exactly how the disease or accident caused death. As doctors learn more about the causes of death, they can do more to postpone it.

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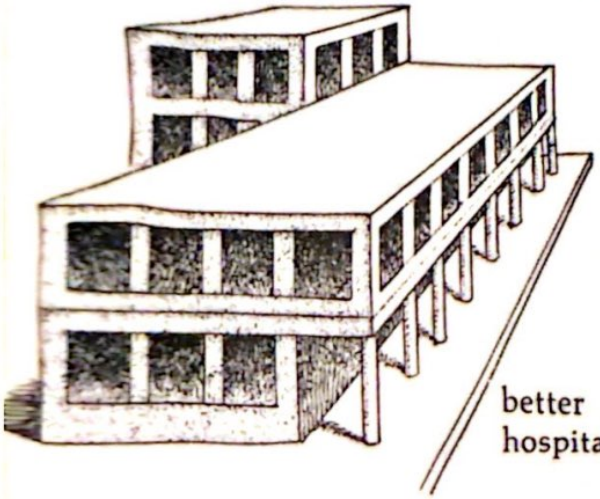
better medicine

All these have helped
to prolong life
and postpone death.

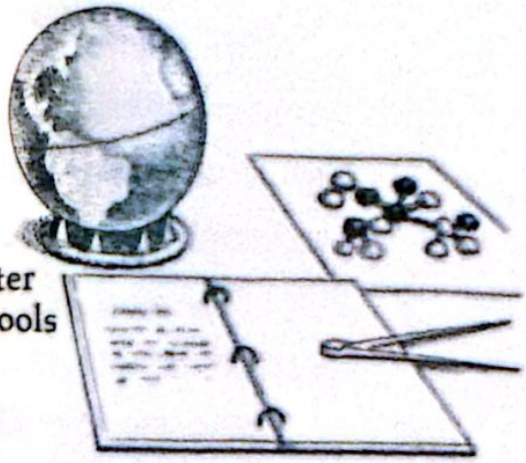
better
water supply

better homes

better
crops



better
hospitals



better
schools

Man's greatest efforts have been devoted to a struggle against needless deaths. Because of great medical discoveries, many thousands of children who might otherwise have died now live to an old age. Because of better crops, protected water supplies, and improved medical care, life has been prolonged and death postponed at least several years.

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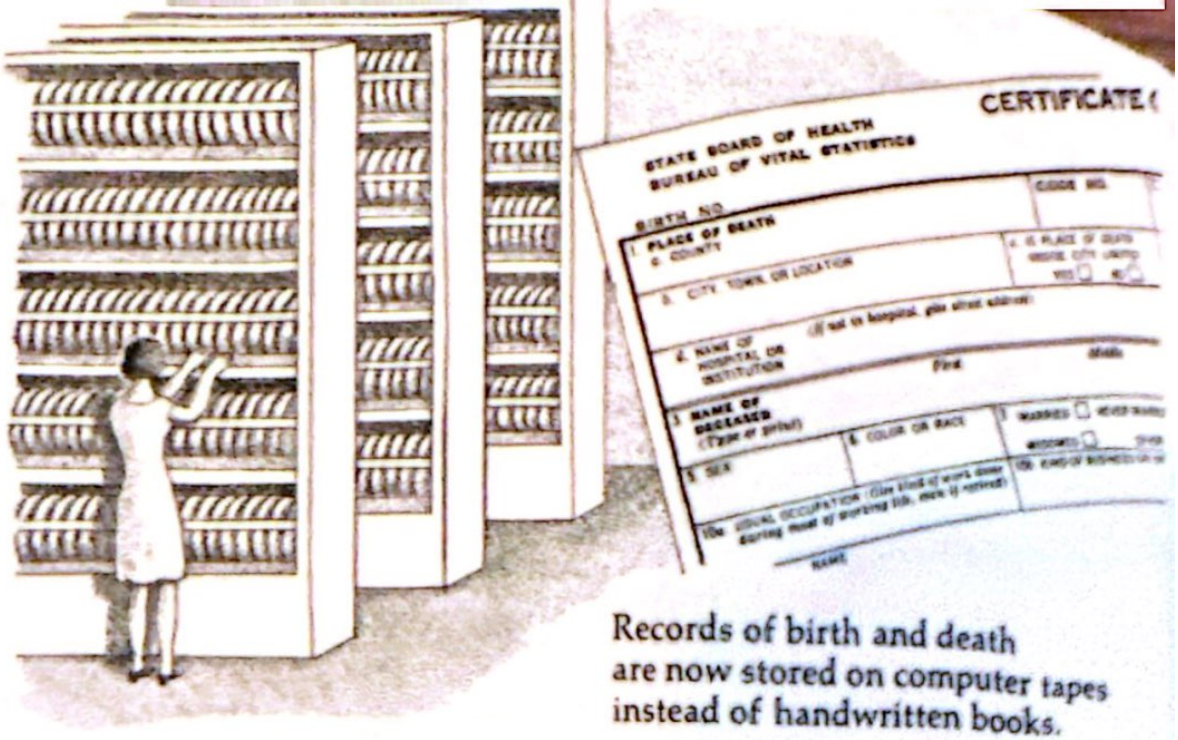

Records of birth and death are now stored on computer tapes instead of handwritten books.

But death is always with us. In times of war, famine, epidemics, or disasters, death may be so common that it is seen every day. In more normal times, death tends to be limited to older people, and since this pattern is normal it receives less attention.

How people deal with death differs in different parts of the world. In this country, and in many others, there are laws to be followed when a person dies. The purpose of these laws is to protect the health of the living. They prevent the spread of disease and insure that the body is buried promptly. Laws also aid in the collection of vital statistics—the records of births and deaths that become a part of the public record. Laws may vary from one state to another, but in general they are in agreement.

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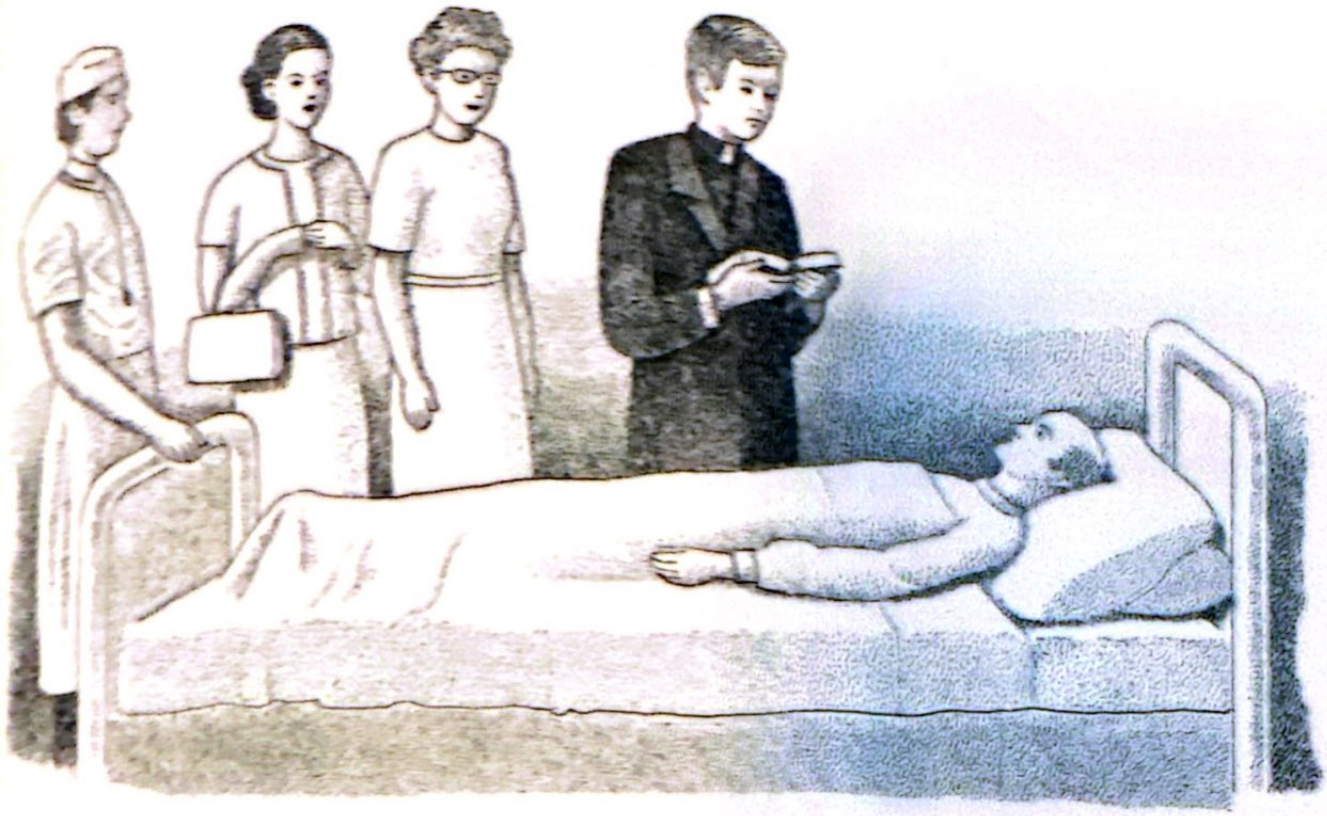

When a person is very ill or dying, a minister, priest, or rabbi will often come to comfort him and members of the family. A doctor often is present when someone dies. He must make out the death certificate that gives such information as the person's name, address, sex, and age—and the cause of death. This certificate is usually filed with the Board of Health. The Board of Health in turn issues a permit for burial.

Sometimes the death of a person involves another health officer—the coroner. He may be called in when the person who has died has not been attended by a physician or when there is an accident or crime.

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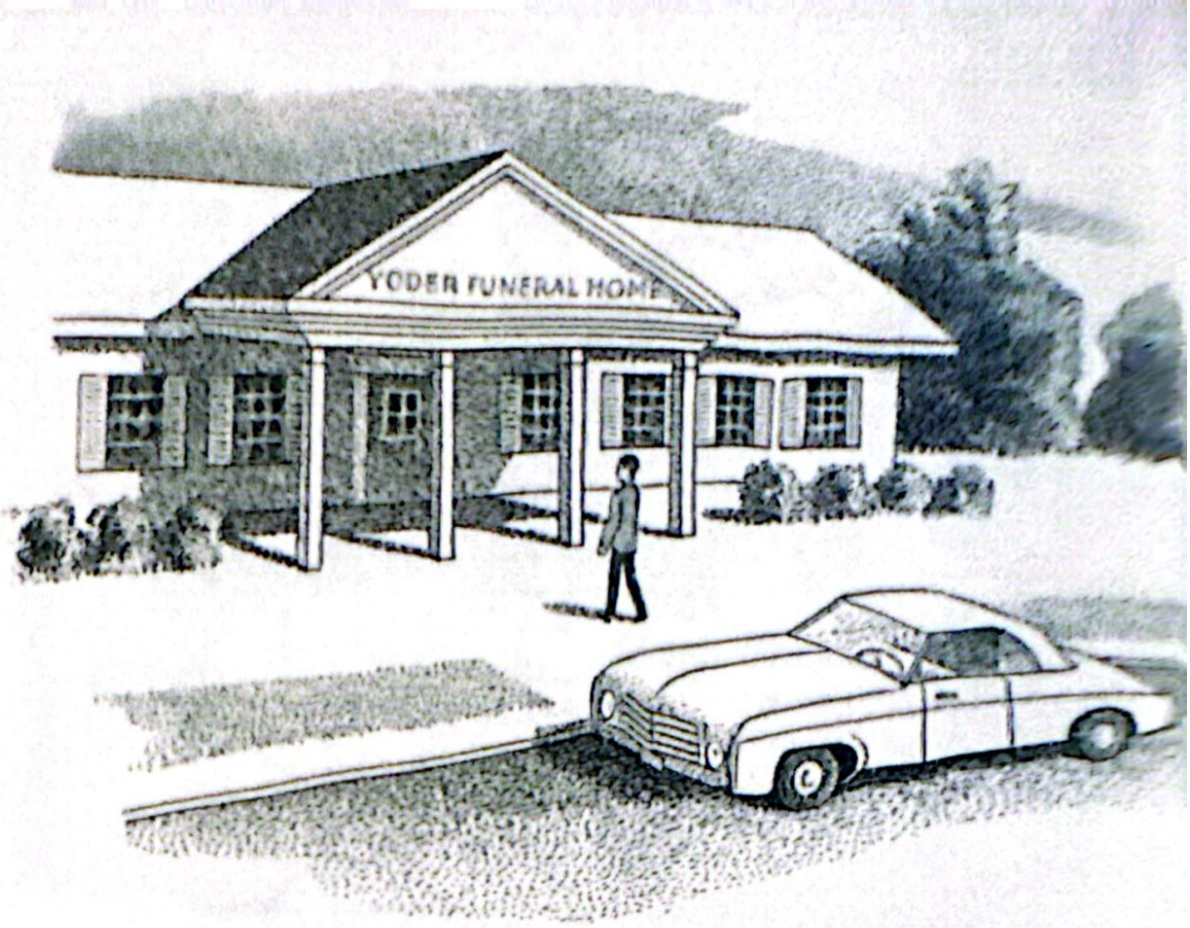

Very soon after the death, a responsible member of the family gets in touch with a funeral director, sometimes called an undertaker, who takes charge. He sees to all the legal actions that must follow death.

A funeral director is licensed to embalm and prepare a body for burial. He is required to have special training. This training varies from state to state. In some the person must also have two years' experience as an apprentice to a funeral director. Then he needs a year or more of study and must pass a state board examination. Those who do and who have the required experience are licensed as funeral directors and embalmers.

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The first thing the funeral director does is to remove the body from the home or hospital. Once the body reaches the funeral home, it is arranged for burial. This procedure involves a number of steps, depending on the cause of death and the funeral plans that the family desires. Unless the body is going to be buried or cremated soon—within a day or so—it is usually embalmed.

Embalming is a chemical process, using liquid chemicals. They are injected into the body and flushed through the blood vessels. About a gallon remains in the corpse. The chemicals penetrate the tissues and act as a preservative.

In addition to preserving the body, the undertaker uses various cosmetics to make it look more lifelike. Color is used to brighten the lips and cheeks. The embalming fluid also includes a pink color, which gives a lifelike tone to the skin.

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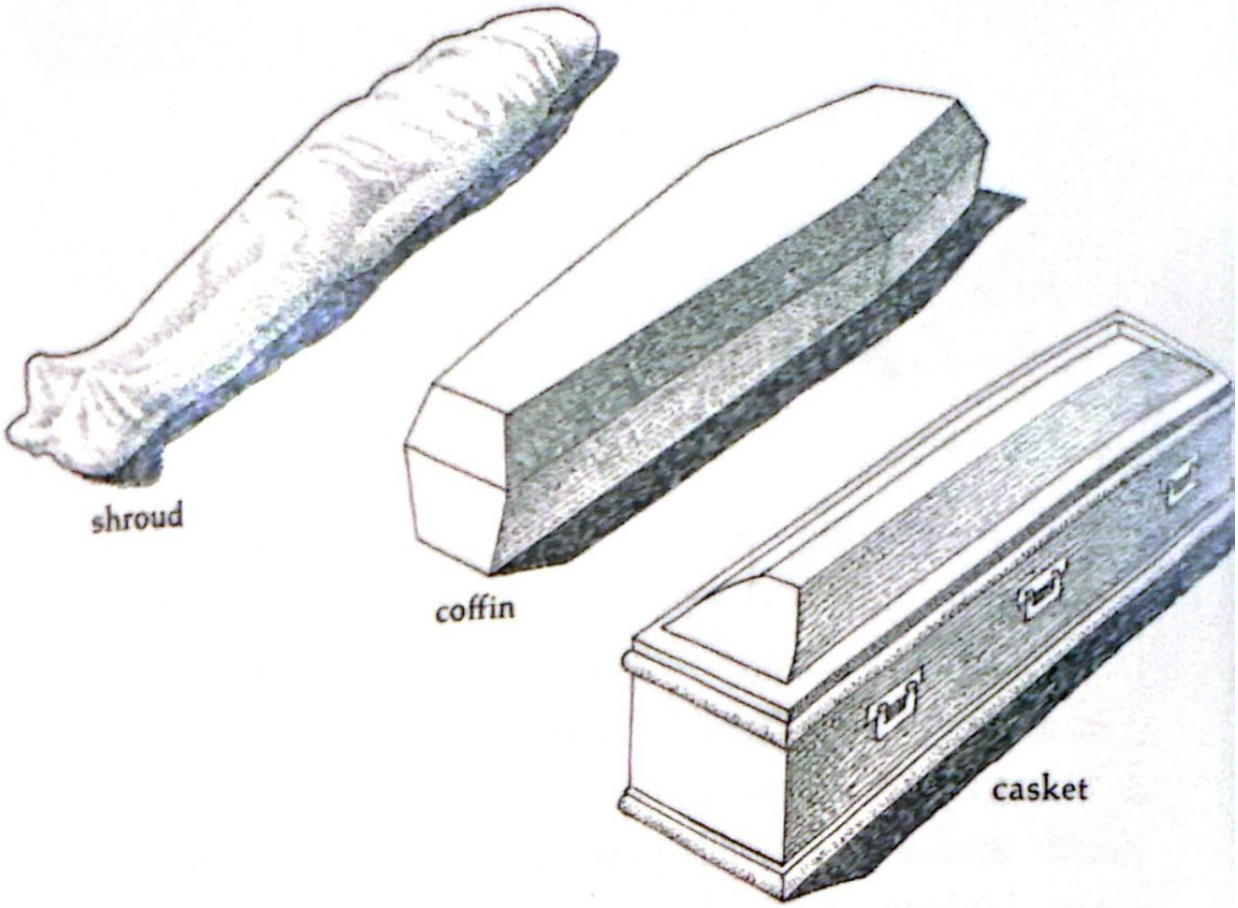

Many of our customs relating to burial are very old ones. Long ago, in this country and in Europe, the body was washed, wrapped in a cloth, called a shroud, and placed in a wooden coffin for burial. The coffin had a typical six-sided, wedge shape. Today a shroud seldom is used. The corpse is usually buried in ordinary clothes. Sometimes special clothes are purchased for the funeral. The coffin is still used in some parts of Europe, but in America it has been replaced by a casket, which does not have the coffin's shape.

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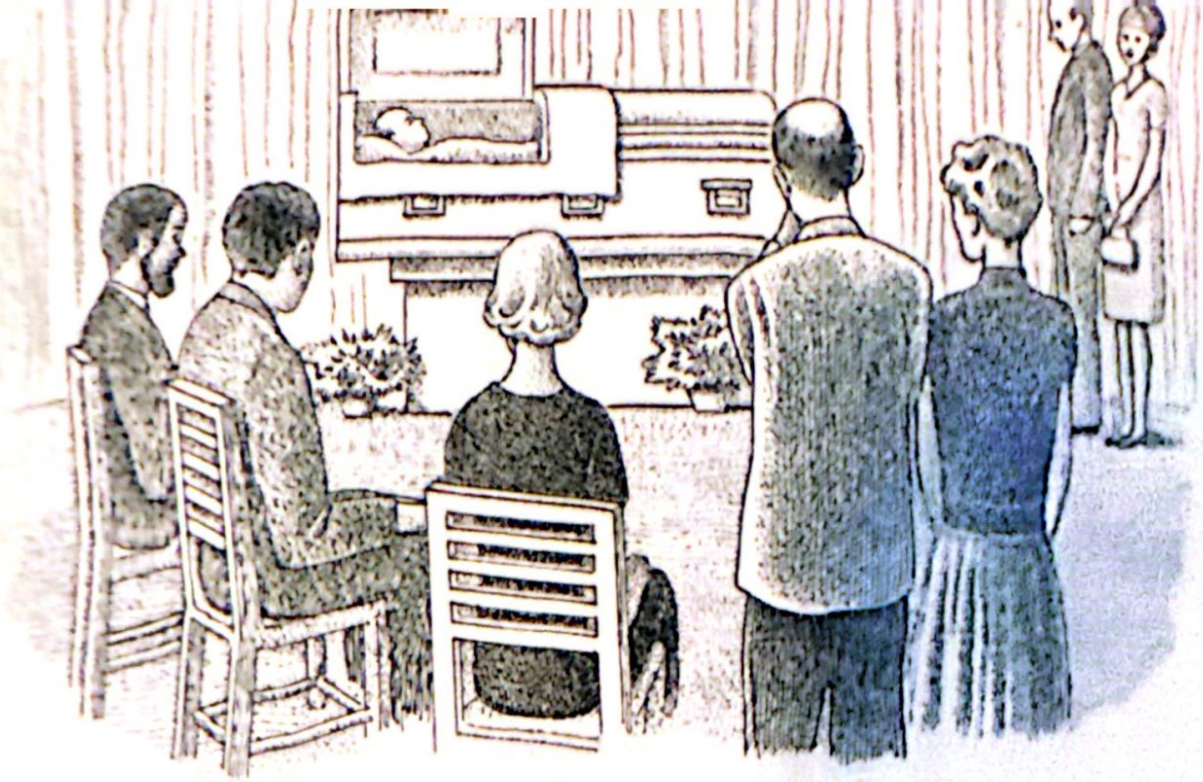

The casket may be made of wood lined with cloth. Often it is made of metal. The wooden casket may range from a simple pine box to an elaborate one of carved hardwood. The metal casket may be constructed of simple steel or of copper or bronze, costing thousands of dollars.

The body is usually placed on view in a funeral home. Here relatives gather to acknowledge the death of their loved one and to share their sorrow. Sorrow is not easy to bear. People naturally show their grief by crying and mourning. Friends come to pay their respects to the dead and to members of the family. If the dead person is well-known, thousands of people may come to view the body over a period of several days.

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Not too long ago, people lived and worked with all their family in one community. The home was large; grandparents, parents, and children lived together. Now families are smaller and have spread all over the country.

When large families were together, funerals were held in the home or at the family church. Today, when many people live in small houses and apartments, this practice is difficult. Funerals usually take place at the funeral home, less often at a church. When the funeral is held at a funeral home, a priest, minister, or rabbi joins the group and conducts the ceremonies.

Funeral services usually involve prayers, a speech or eulogy in praise of the dead person, and sometimes the singing of hymns. Relatives and friends may be selected to carry the casket from the funeral parlor to the hearse, or funeral car. They are known as pallbearers. After the funeral services, close friends and relatives

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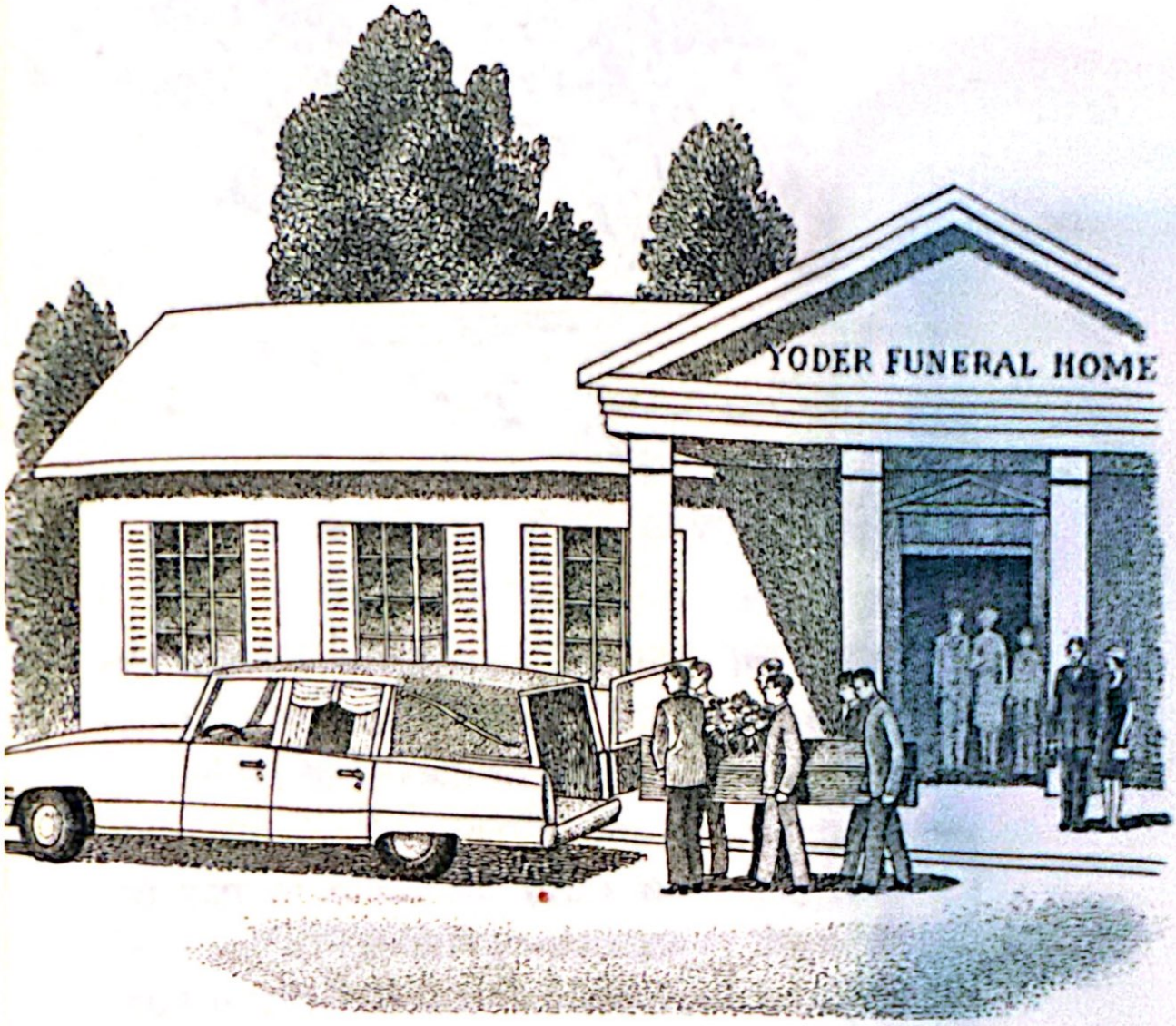
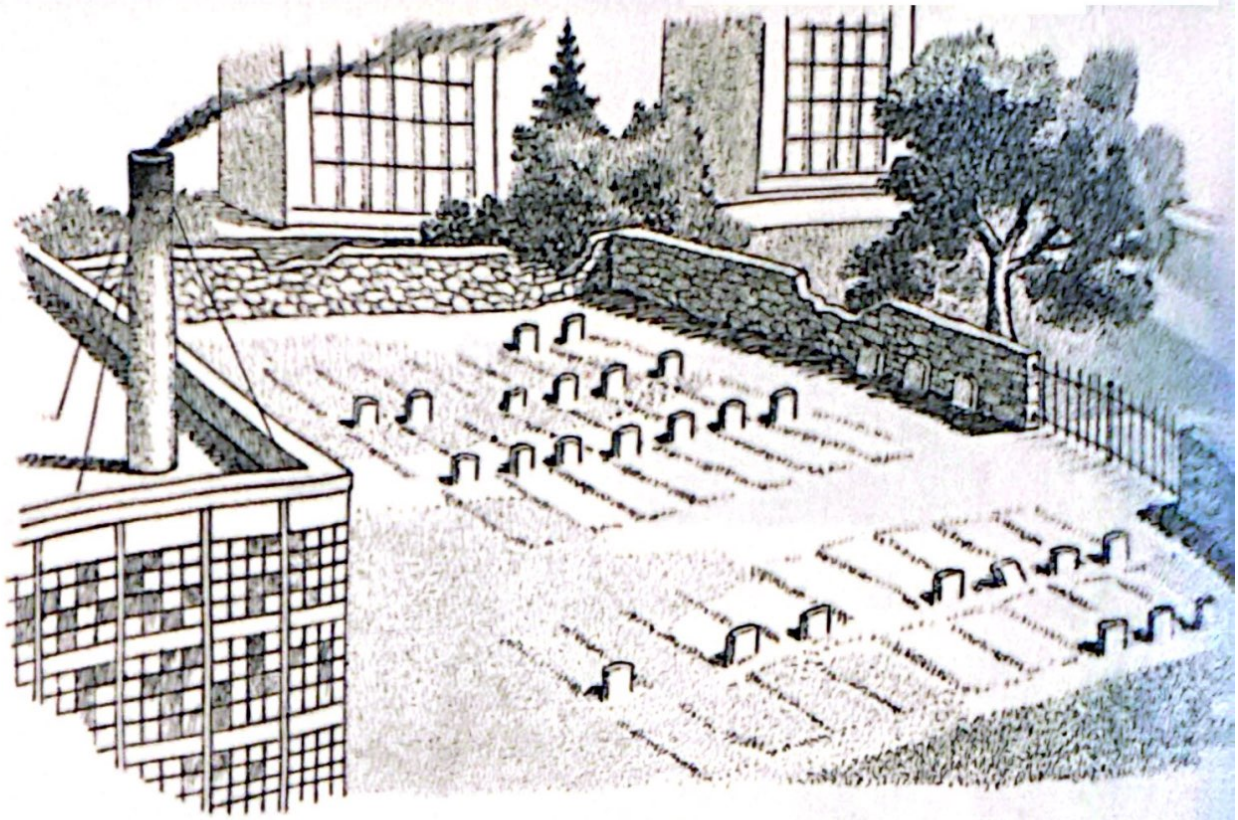


usually go directly to the cemetery, following the hearse with the casket.

Before burial, the casket or coffin is sometimes put in a second case called a burial vault. It is a larger box made of cement or metal, which seals tightly and protects the casket.



The funeral director is paid for his services and those of his staff, for the use of his funeral home, for embalming, for the use of his hearse, and for the casket and burial vault. People often set aside money or carry insurance to pay for their funeral. Otherwise, the family of the dead person pays. Funerals cost at least several hundred dollars and may cost as much as several thousand.

People who die penniless, without friends or relatives, are buried by the community welfare agency. The burial ground for such unfortunate people is called Potter's Field, the name of the burial place provided, long ago, for strangers at the city of Jerusalem.

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Cemeteries are plots of land set aside for burials. Some time ago, when rural families lived far apart, each family had its own burial ground. More settled areas had a cemetery near the church, and all the neighbors used it. Some cemeteries are still owned and operated by churches and are reserved for the burial of members of that faith.

Cemeteries also are operated by social organizations, some of which are set up to provide low-cost burial for members. Other cemeteries are privately owned and are operated as a business.

Usually a cemetery arranges for the continuous care of the graves. In addition to the charge for burial, the family may pay a fee for perpetual care, that is, maintaining and keeping the grave in good order for all time.

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Families frequently want to be buried together. To this end, they purchase a burial plot, which may have room for two or four graves. A while back, the burial plots were larger and often had room for a dozen graves or more.

In small towns, where the cemetery is near, members of a family care for their family plot. They plant flowers and trim the grass on the graves. They keep fresh flowers on new graves, till the grass and plantings grow and cover the soil. On Sundays families visit the cemetery and wander among the gravestones, reading the inscriptions.

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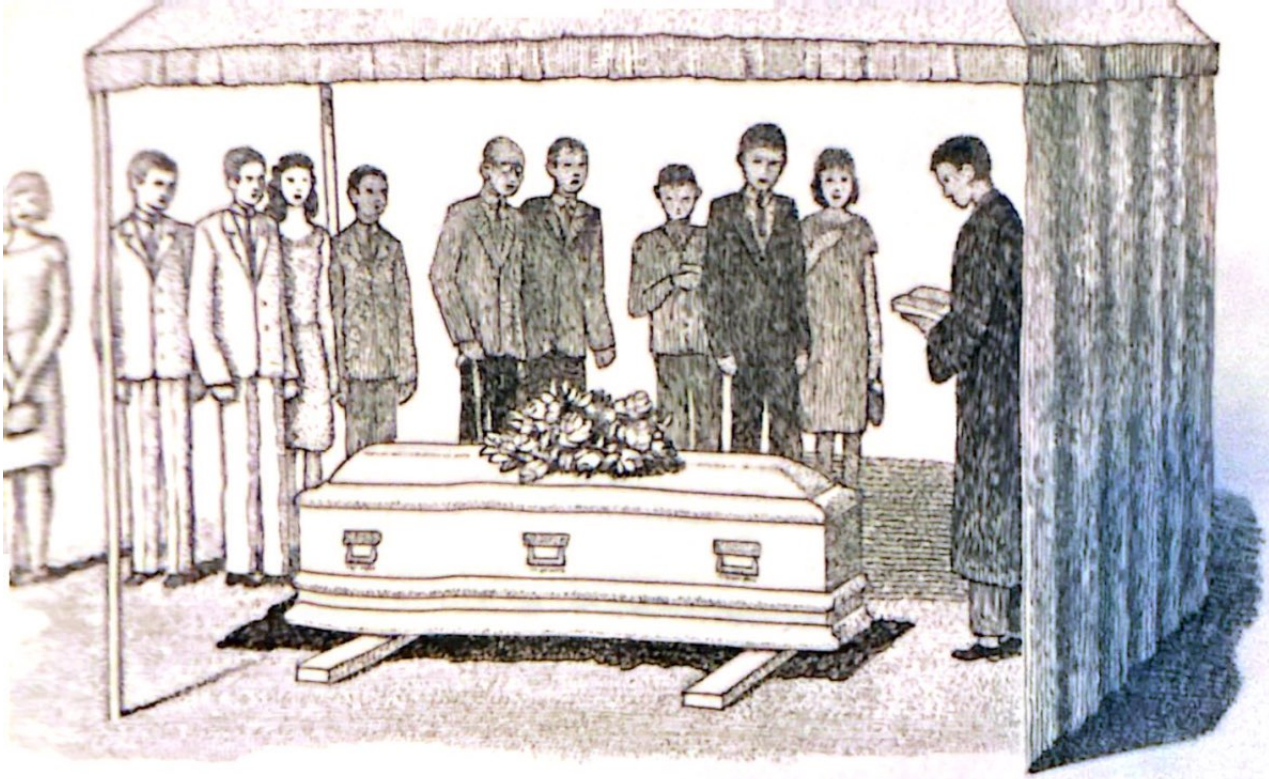

Arrangements are made in advance for burial, and the grave is dug before the funeral takes place. When the mourners assemble at the cemetery, there are further services—usually short. The casket is lowered into the grave, or into the burial vault. Relatives may throw in a symbolic handful of earth or a few flowers. After the mourners leave, the grave is filled.

Graves once were dug six feet deep or so, for fear that wild animals would harm the bodies. Nowadays the top of the casket or of the burial vault is usually three feet or more below ground. This depth requires a hole four to five feet deep and seven feet long. In some countries graves are dug deeper and two or three coffins are placed in one grave.

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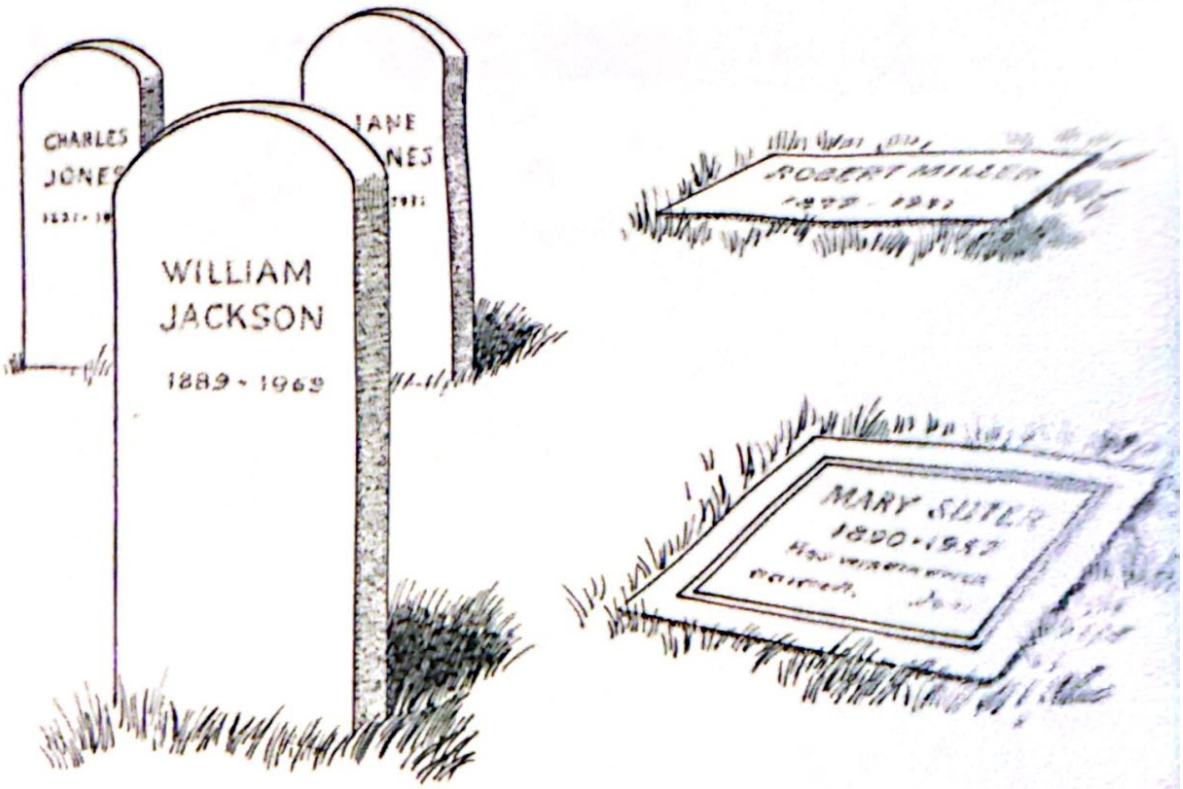

After burial a body, which is composed of nearly three-quarters water, soon changes. The soft tissues break down and disappear first. Within a year only bones are left. They too gradually disintegrate. Only in the rarest cases do bones become fossils and last for thousands of years. In dry climates a body may dry out completely and become a mummy.

After the funeral the family erects a headstone or monument at the grave. On it are carved the person's name, date of birth and death, and perhaps a few words of remembrance. Headstones or monuments are not permitted in the special kinds of cemeteries called memorial parks. Instead, a flat plate on the grave identifies it.

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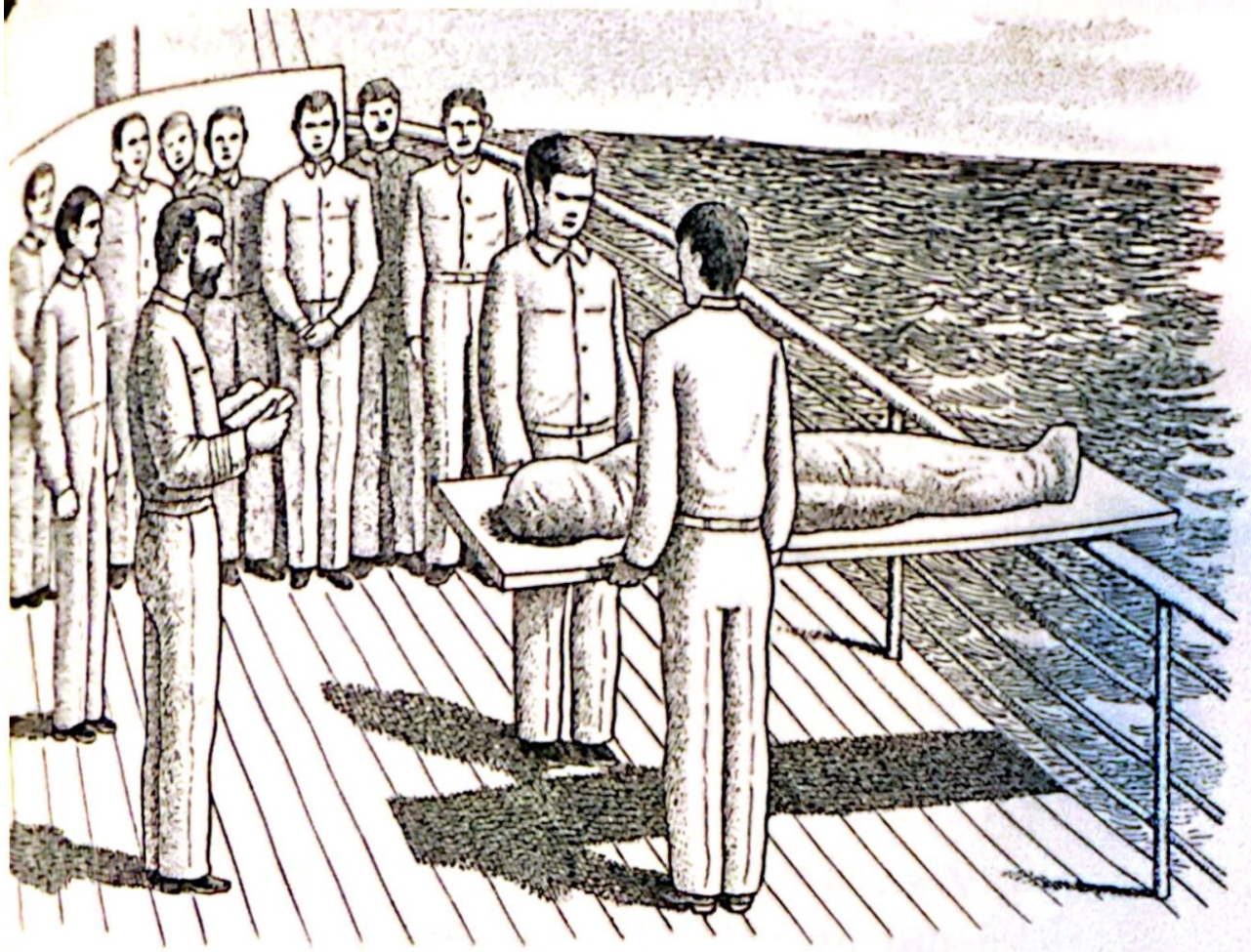

While most people are buried underground, there are places where the ground is always wet and swampy. In such areas burial vaults are set above the ground. Also, wealthy families may erect a special building of stone, called a mausoleum, in which all the family burial vaults are placed.

Sometimes people die at sea or ask to be buried at sea. Then the body is wrapped in cloth, or a shroud, sewed into a canvas cover, to which a heavy weight is added, and placed on a plank at the rail. After funeral services, the plank is tilted and the body slides into the water.

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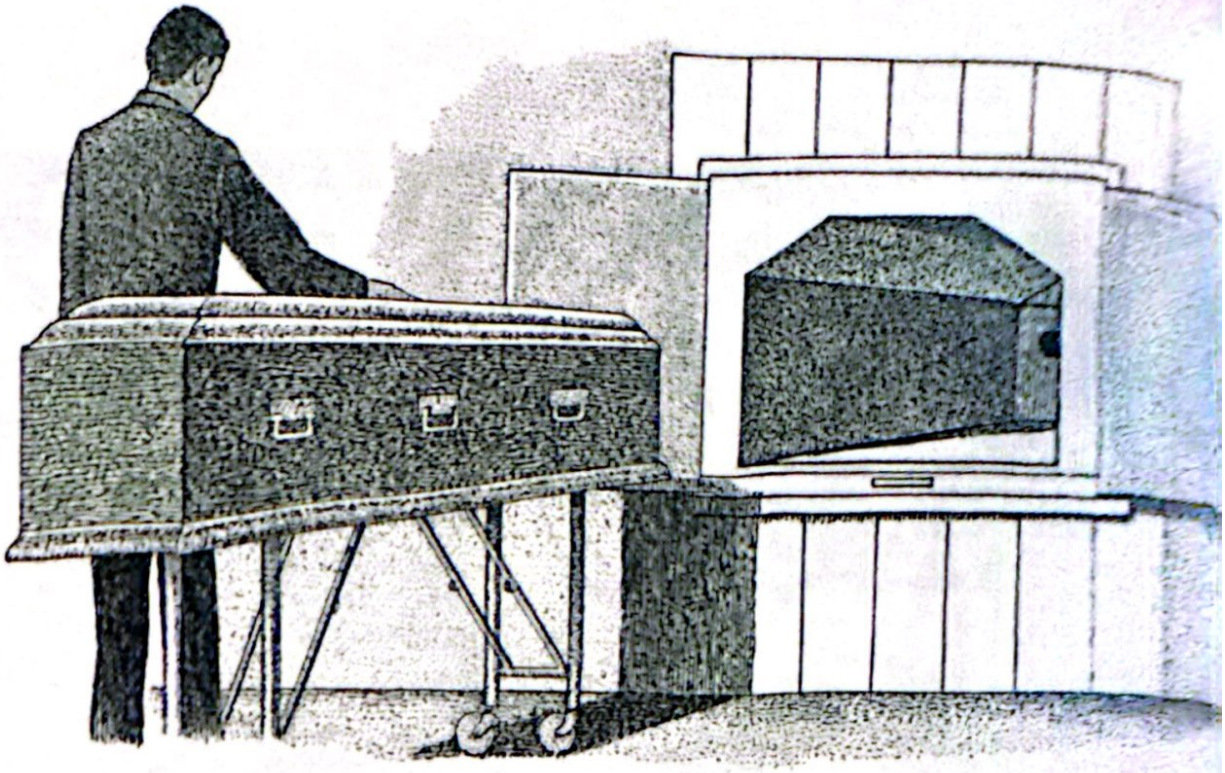

A number of people ask that their body be burned to ashes, or cremated, after they die. In England, over half the people make this request. Cremation is an ancient custom. In modern times, cremation takes place in an oven or furnace, where the high temperature destroys the casket and all the body, including the bones, in just about an hour. The bones are reduced to fragments and a fine gray ash, which is collected after the furnace cools.

Some people who wish to be cremated ask that their ashes be spread over a favorite spot. Others ask that their ashes be placed in an urn, or jar, which may be buried in the family plot. Some cemeteries have a special mausoleum where the urn is kept with a memorial tablet.

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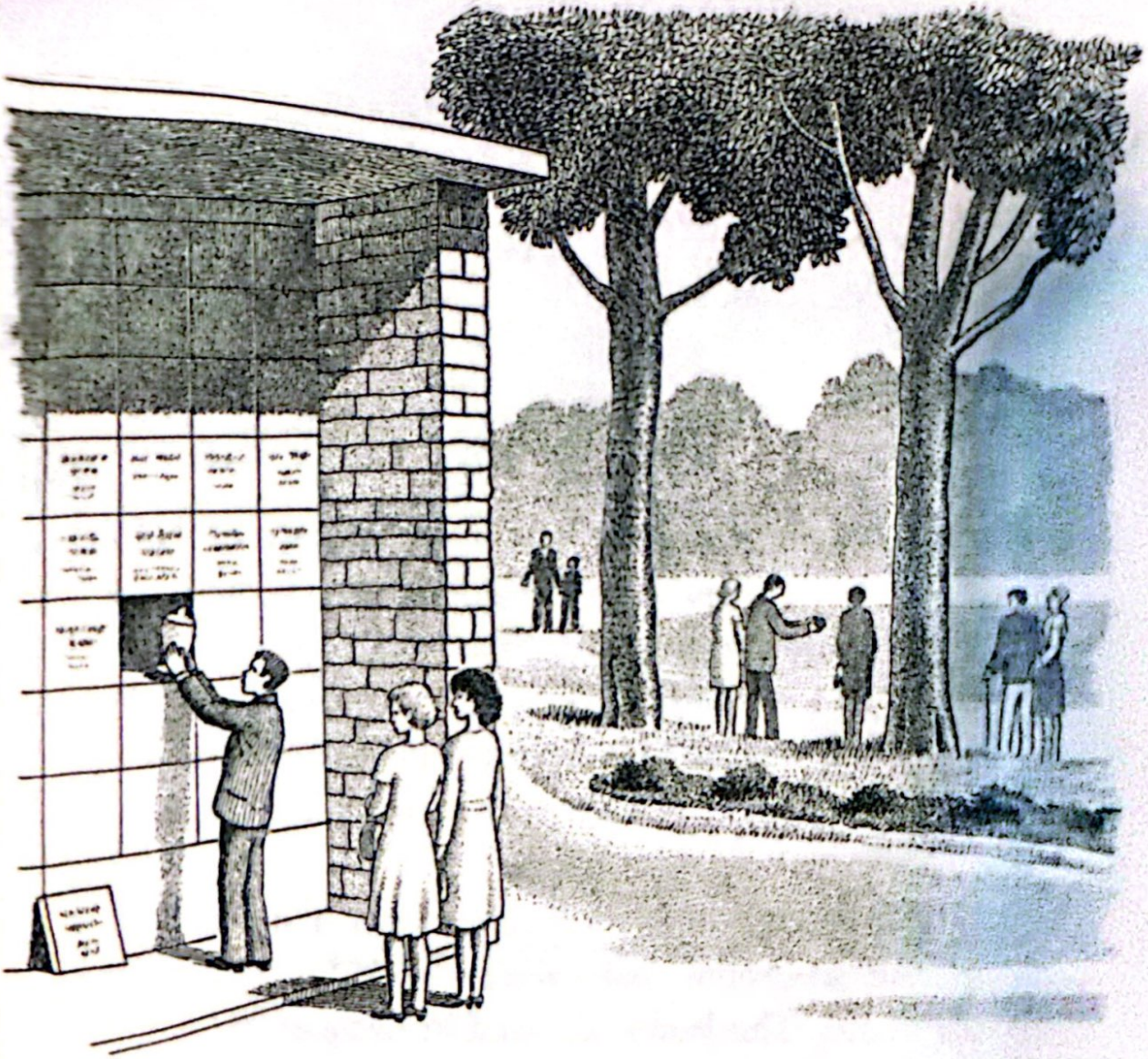
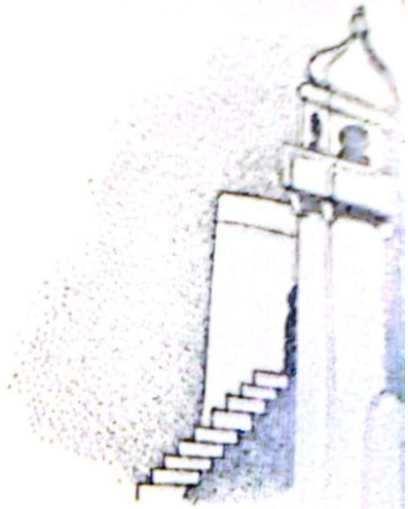


Burial customs once differed widely the world over. But explorers and colonists from Europe brought their customs to many new places. The beliefs of tribes and local groups often changed after Europeans came to the area to live. A study of burial customs past and present reveals the very different beliefs about life and death held by different people.



In olden times the Iroquois Indians of New York State first buried their dead in shallow graves. Later the bones were dug up and carefully preserved. Finally, a great mourning feast was held, and all the relatives brought the bones to a central burial. There they were buried with rich presents for the spirits.

The Maoris of New Zealand put a dying person in a special hut, which was burned after his death. The body, dressed in the person's best clothes, was seated in public view. Mourners, wearing wreaths of green leaves, wailed and slashed their own body with knives. They chanted praise of the departed person and his great deeds. Later the body was wrapped in a mat and placed in a hollow tree or on a platform in the branches. Then followed a feast at which the mourners gave gifts to the dead man's family. Years later the bones were cleaned, colored with red earth, and placed in a sacred cave.

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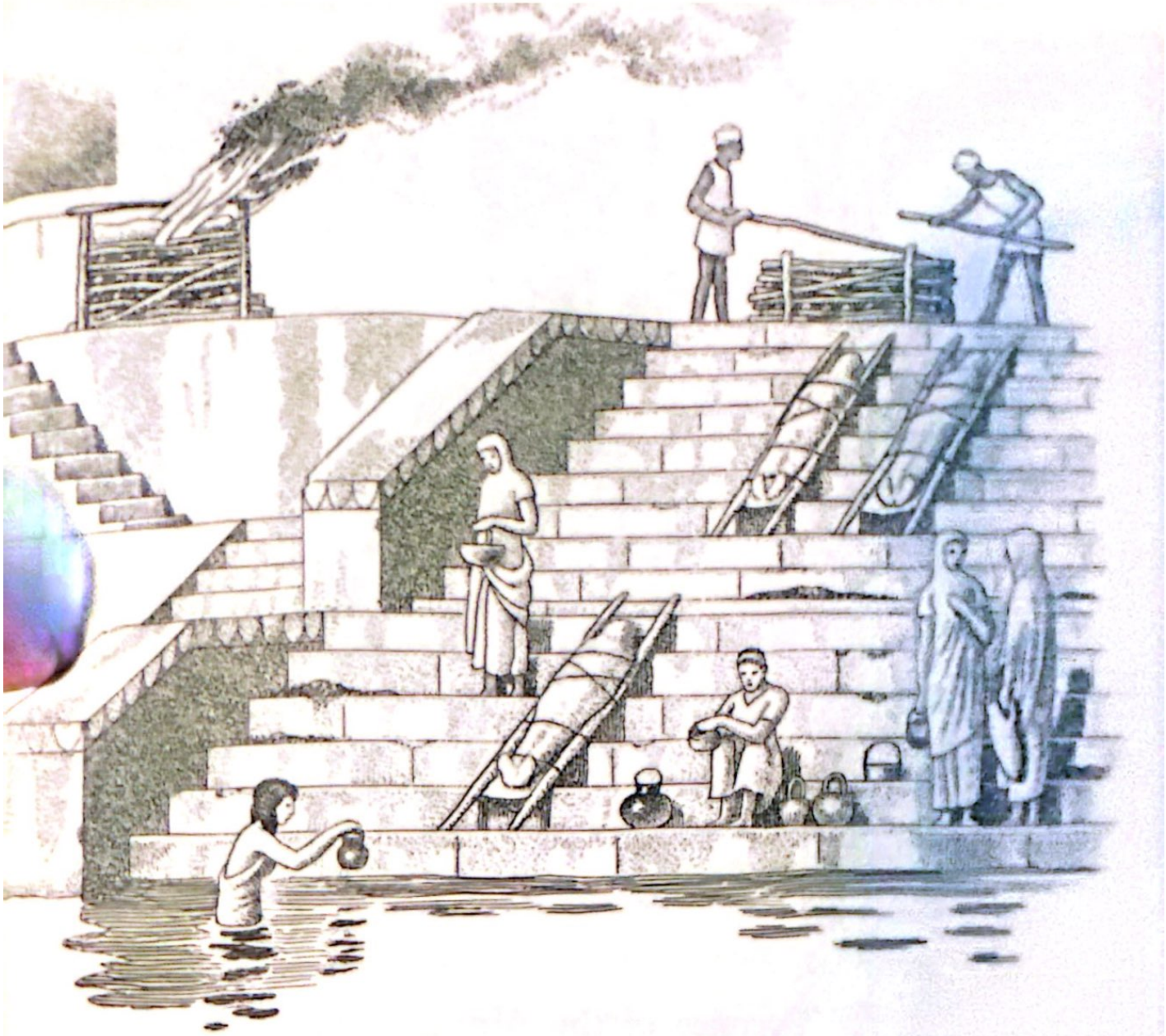

In much of India and South Asia, cremation is practiced. The body is carried to a burning ghat—a level area on a riverbank, close to a temple. There it is burned on a pile of logs, and the ashes are thrown into the river. The Ganges is India's sacred river, so many Hindus wish to have their body cremated on its banks and their ashes thrown into its holy waters.

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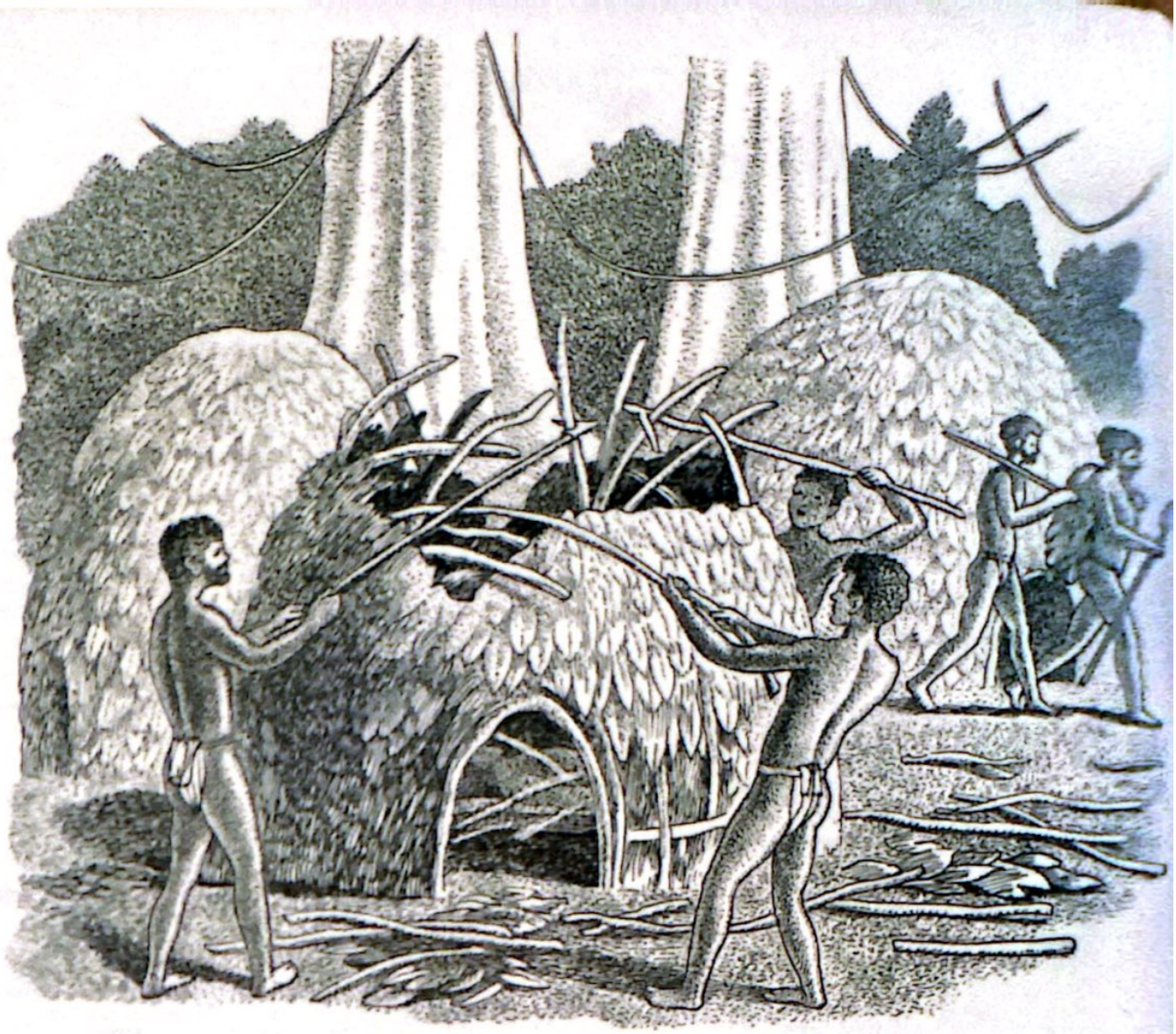

The Pygmies of the African Congo act simply and quickly when someone dies. They pull down his hut of leaves and branches over the body and move their camp immediately. While breaking camp, relatives wail and mourn. Afterward, the name of the dead person never again is mentioned.

The Navajo Indians of the Southwest, like many other people the world over, were afraid of death and of the spirits of the dead. When a

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person died, his house was burned or torn down. Relatives prepared the body and buried it. But each returned home by a roundabout way, so the spirit could not follow him. Then the mourners stood in the smoke of an open fire to purify themselves.

When a Chukchee person of northern Siberia dies, the body is watched for three days to be sure the spirit has departed. During that time no drum is sounded. Neither can people pound or scrape as part of their work. The corpse is not taken out through the entrance of the thick skin tent, but a special hole is cut in the side and the body is pulled through. The women sew up the hole at once, so the spirit cannot return and molest the living. The body may be cremated, but more often the medicine men claim that it has showed them exactly where it wants to be placed. Then they carry the body to a lonely spot, where they leave it.

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Though customs differ, people the world over show sorrow and grief when a loved one dies. Young and old cry and mourn their loss. Sometimes the mourning period lasts for only a few days, sometimes for a year or more. Some people cry and show grief openly. Others keep their feelings to themselves and do not show them.

To show their sorrow, people cut off their hair; others tear their clothing. Some do not leave their homes; others are not allowed to

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eat certain foods. Some put a notice in the newspaper telling of their loss. In Europe and America black is the color of mourning. In Japan and other parts of Asia, it is white.

Death is so complete and final that people all over the world have developed their own special beliefs about its occurence. Many people believe that within each person (and sometimes also in every animal, plant, rock, and river) there is a spirit. This spirit or soul can exist separately from the body, and according to these beliefs it has a life of its own.

There is no way to know if these beliefs are true or not. They are beyond our power to test or experiment. Such beliefs have existed for thousands of years and are still held today. People of other lands and different religions have their own beliefs about life and death, souls and spirits, just as you do. They may seem curious to us, just as our beliefs seem strange to them.

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One very common belief is that a spirit or soul continues to exist after a person dies. It may leave the body to wander or to go on a long journey. Then it will need food and drink or perhaps weapons to take along. These things may be placed in the grave.

The spirit may be headed to a spirit land, which may be a place like the village it left. But usually the spirit land is a better, happier place with more of the things that all people want or enjoy. In it there are no hunger, fear, or hardships. Often the spirit land is underground or in the sky among the stars.

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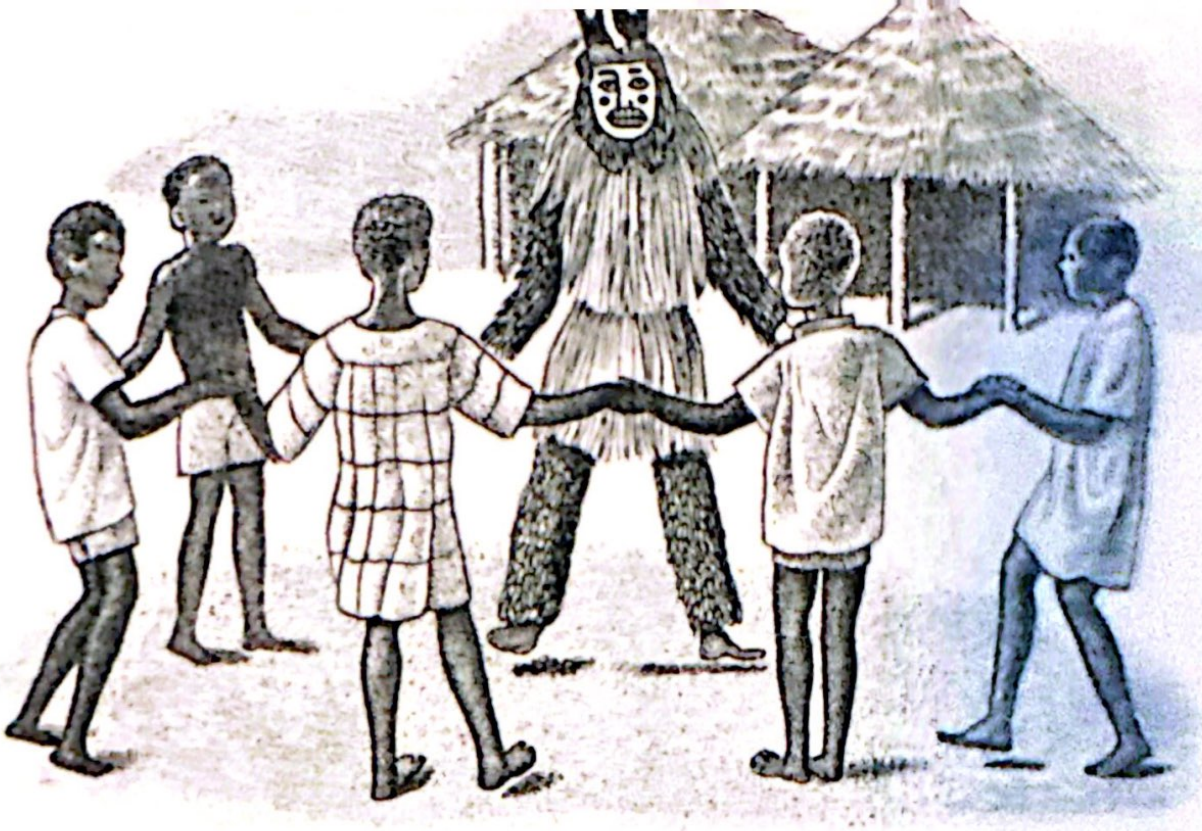

Some people believe that the spirits of warriors go on fighting and the spirits of farmers keep on farming. Other spirits return to aid and protect children or to help relatives in trouble. Some spirits are evil. They come back to frighten people, to punish enemies, or to discipline those who do not obey. Some people believe that after death a person's spirit is rewarded or punished for things that he did when alive.

Spiritualists believe, though there is no proof, that the human spirit can be called back after death by a special person—a medium. Some mediums claim that, with their aid, spirits can answer a relative's questions, by rapping on a table or even by talking.

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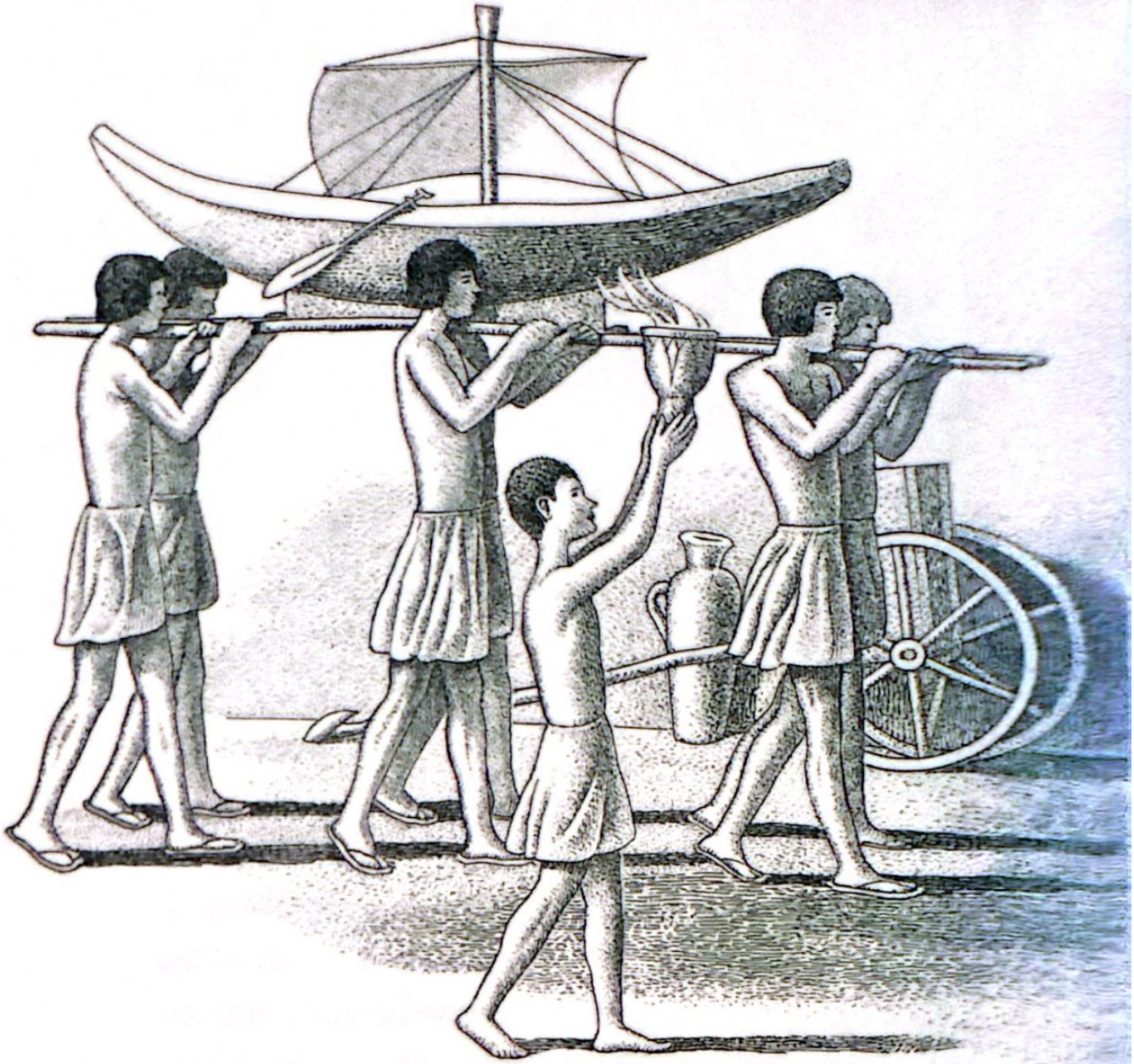

Belief in some kind of spirit life after death can be so strong that people spend much of their life preparing for death and for the needs of the spirit. The Pharaohs, ancient kings of Egypt, built great pyramids to serve as tombs. Their bodies were treated with spices, herbs, and chemicals to preserve the flesh and turn the corpse into a mummy.

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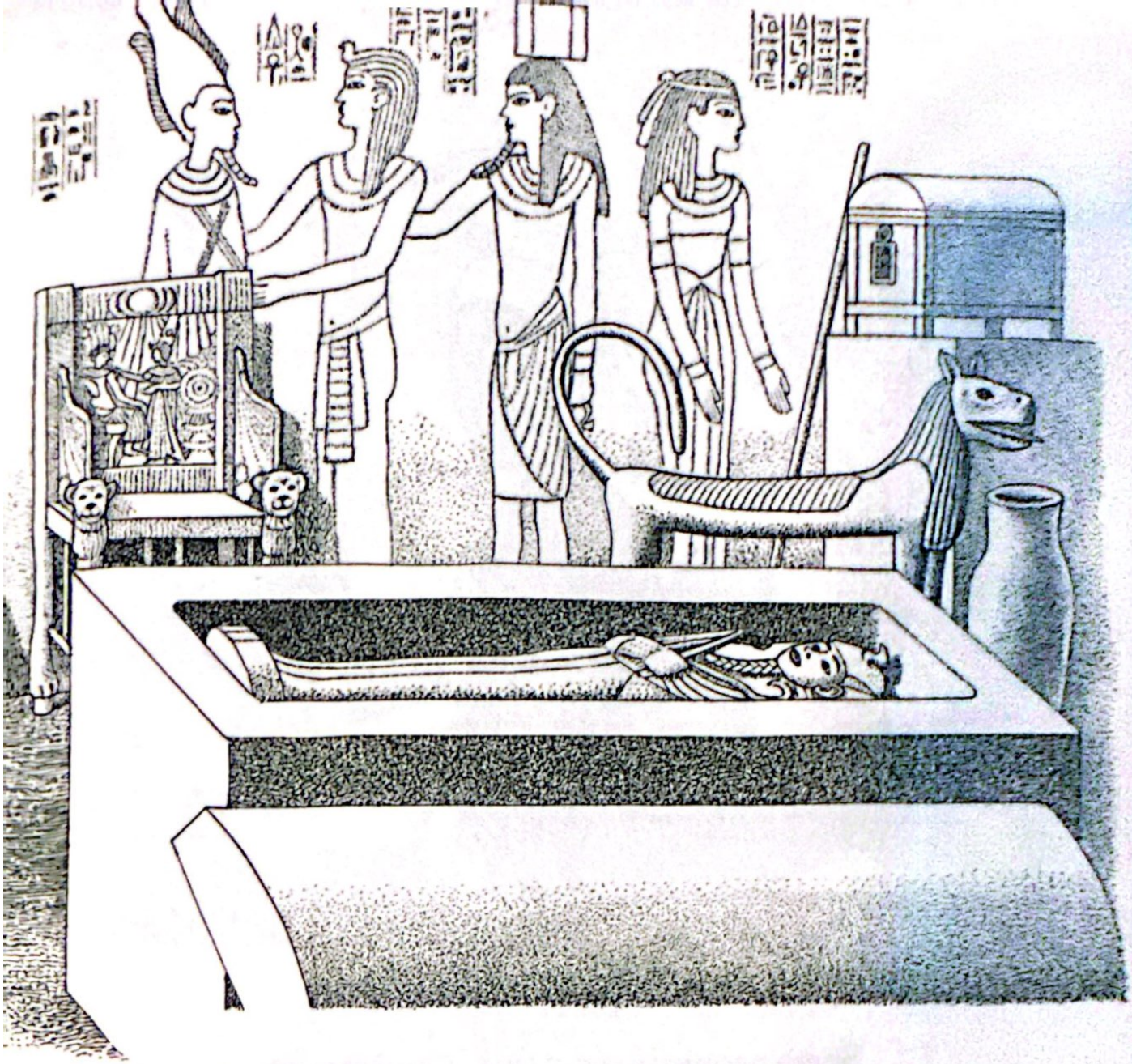

The mummy of a king or noble was wrapped in many layers of cotton cloth. It was placed in a beautiful wooden case, which was sealed in a vault of stone. Great gifts of gold and jewels were buried with the mummy. Slaves were killed, so their spirits could serve the king on his spirit journey. Everything he might need was put in the tomb—food, tools, chariots, and thrones.

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Some people believe that a spirit leaves a dying person and enters the body of a baby that is being born. Then the spirit will have a new place to live. If it is a good spirit it may help the baby. People in West Africa believe that the spirit of an old man or woman enters the body of a young grandchild in the family. In this way the spirit enjoys another life amid the people who are dear to him.

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Other people believe that a human spirit finds a home in some animal—a bird, a cow, or a pig—depending on what kind of person the dead man was. These interesting beliefs of a spirit living again in another person or animal are called reincarnation.

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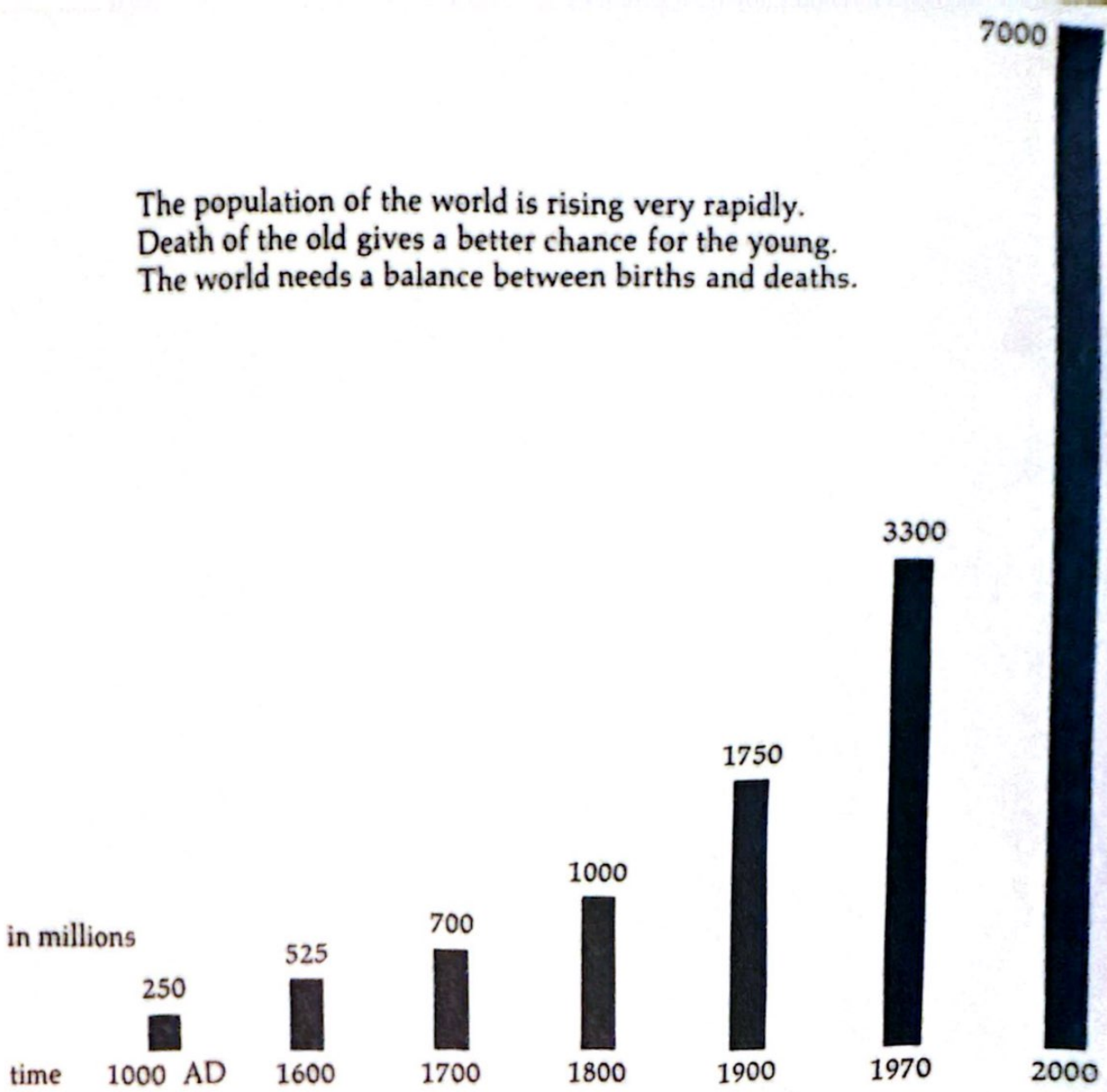
The population of the world is rising very rapidly.
Death of the old gives a better chance for the young.
The world needs a balance between births and deaths.



In modern times, people have learned much from one another, including beliefs about life and death. People have found ways to live longer, healthier, and sometimes happier lives. They realize that life has its joys and sorrows. Of all sorrows, death may be the most painful for the bereaved, although for the dying person it may be a release from suffering. In any case, no one ever has found a way to avoid death.

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Scientists tell us that life on earth could not continue without death. There would soon be a shortage of food, water, and even of space. Even now many parts of the world are over-populated. The death of the old gives the young a better chance to live and grow.

Since death always comes, people have learned to expect it and accept it. Day by day, they try to add joy in living for themselves and for their relatives and friends. People who are loved and have useful, happy lives come to accept all of life, including its end.

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Herbert S. Zim was born in 1909 in New York City, but most of his childhood was spent in Southern California. He finished his education in New York and holds B.S., M.A., and Ph.D. degrees from Columbia University.

Dr. Zim has spent over thirty years teaching in the fields of science and science education. At one time he worked with the pre-induction training program of the War Department and he has been educational consultant for the United States Fish and Wildlife Service. In 1967 he received the honorary degree of Doctor of Science from Beloit College, Wisconsin, and has held the post of Professor of Science Education at the University of Illinois.

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Sonia Bleeker has been widely acclaimed for her seventeen books on the Indians of North and Central America and for her fine books on the peoples of Africa. Educated in the New York public schools, Dr. Bleeker (Mrs. Herbert S. Zim) received her B.A. degree from Hunter College and did graduate work in anthropology at Columbia University, under Franz Boas and Ruth Benedict. In 1967, she was awarded the honorary degree of Doctor of Science from Beloit College, Wisconsin.

As a student, and later with her husband, Dr. Bleeker has criss-crossed the United States many times, concentrating on Indian country, and visited Canada, Central and South America a number of times as well. In recent years Dr. Bleeker has made four trips to Africa as part of her research on the anthropology of that continent.

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